BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE INSTRUCTION 11-2CV-22 VOLUME 3

12 JUNE 2015

Flying Operations

CV-22 OPERATIONS PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at **www.e-publishing.af.mil** for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ AFSOC/A3V

Certified by: AF/A3O
(Brig Gen Giovanni K. Tuck)

Pages: 108

Supersedes: AFI11-2CV-22V3,
9 November 2011

This instruction implements Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*, AFPD 11-4, *Aviation Service*, Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and AFI 11-202, Vol 3, *General Flight Rules*. It establishes operating procedures for all CV-22 units. This publication applies to the Air National Guard (ANG). This publication does not apply to Air Force Reserve Command (AFRC) units. It is used in conjunction with AFI 11-202, Vol 2, *Aircrew Standardization/Evaluation Program*, AFI 11-202, Vol 1, *Aircrew Training*, and Major Command (MAJCOM) supplements thereto. The Privacy Act of 1974 applies to certain information gathered pursuant to this instruction. The Privacy Act System Of Records Notice F011 AF XO A, Aviation Resource Management Systems (ARMS) covers required information. The authority for maintenance of ARMS is 37 USC 301a (Incentive Pay), Public Law 92-204, Section 715 (Appropriations Act for 1973), Public Laws 93-570 (Appropriations Act for 1974) and 93-294 (Aviation Career Incentive Act of 1974), DoDD 7730.57 (Aviation Career Incentive Act of 1974 and Required Annual Report, February 5, 1976, with Changes 1 and 2), and Executive Order *9397 (SSN)* as amended by Executive Order 13478, Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers, November 18, 2008. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Unless prescribed within this publication, requests for waivers must be submitted through chain of command to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in

accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and must be thoroughly reviewed. Major changes include a change to radar altimeter requirements, new operating restrictions for the standby flight instruments, Terrain Following/Terrain Avoidance (TF/TA) operations for combat contingencies, and single engine (OEI) planning. The en route planning procedures for low-level operations were redefined with altitude restrictions. Also included are aircrew briefing procedural requirements, dust mitigation methods during onload/offloading procedures, and checklist guidance for tactical onload/offload operations. Operating guidance on the use of interim power was added. CV-22 aircrew are now authorized the use of Suite of Integrated Radio Frequency Countermeasures (SIRFC) training software. Finally, a caution was added to prevent the inadvertent actuation of the emergency landing gear blowdown system. Tier requirements have been annotated.

Chapter 1

GENERAL INFORMATION

1.1. General. This volume provides operational guidelines for CV-22 aircraft. It is written for normal and contingency operations to reduce procedural changes at the onset of contingencies. Training procedures are included. Air Force Special Operation Command Standardization/Evaluation (AFSOC/A3V) has overall responsibility for the administration of this volume.

1.2. Applicability. This instruction is applicable to all individuals and units operating CV-22 aircraft unless specifically exempted by this instruction. Copies should be made available to all aircrew members operating the CV-22.

1.2.1. Unless otherwise stated in this instruction, the CV-22 is considered a helicopter for the purpose of terminal area operations (takeoff, approach, and landing) or when configured ≥ 60 nacelle. The CV-22 is considered a fixed-wing aircraft in all other modes of flight.

1.2.1.1. Except where otherwise noted, for purposes of any Federal Aviation Administration (FAA) guidance or Air Force Instruction, when in airplane mode CV-22 crews will follow fixed-wing rules. (T-1) When flying in conversion mode (≥ 60 nacelle) crews will follow helicopter/rotary wing rules. (T-1)

1.3. Key Definitions.

1.3.1. "Will" and "Shall" indicate a mandatory requirement.

1.3.2. "Should" indicates a recommended procedure.

1.3.3. "May" indicates an acceptable or suggested means of accomplishment.

1.3.4. ***WARNING:*** Operating procedures, techniques, etc., which will result in personal injury or loss of life if not carefully followed.

1.3.5. ***CAUTION:*** Operating procedures, techniques, etc., which will result in damage to equipment if not carefully followed.

1.3.6. **Note:** Operating procedures, techniques, etc., which are essential to emphasize.

1.3.7. See **Attachment 1**, Glossary of References and Supporting Information for additional terms.

1.4. Deviations and Waivers. Do not deviate from the policies and guidance in this instruction, except for reasons of safety.

1.4.1. Although this publication provides guidance for aircraft operations under most circumstances, it is not a substitute for sound judgment. When it is necessary to protect the crew and aircraft from a situation not covered by this instruction and immediate action is required, the Pilot in Command (PIC) has ultimate authority and responsibility for the course of action to be taken. Report deviations, without waiver, through channels to MAJCOM/A3 within 48 hours, followed by a written report, if requested. Unless otherwise indicated, AFSOC/A3 is the waiver authority for this instruction. AFSOC/A3 may delegate this authority to the Commander Air Force Special Operations Forces (COMAFSOF) for operationally assigned forces. If the AFSOC/A3 chooses to delegate waiver authority, it will

be done in writing and will specify which portions of this instruction may be waived by the COMAFSOF. Request waivers through appropriate command and control channels.

1.4.2. Tier Waiver Authority IAW AFI 33-360 is as follows:

1.4.2.1. "Tier 0" (T-0) requirements are waived by respective non-Air Force authority (e.g., Congress, White House, OSD, etc.).

1.4.2.2. "Tier 1" (T-1) requirements are waived by the MAJCOM/CC or delegate with concurrence of publication approver. When multiple MAJCOMs are affected, then T-1 is appropriate.

1.4.2.3. "Tier 2" (T-2) requirements are waived by the MAJCOM/CC or delegate (No lower than MAJCOM Director).

1.4.2.4. "Tier 3" (T-3) requirements are waived by the Wing/DRU/FOA/CC or delegate (No lower than the OG/CC or equivalent).

1.4.3. **Roles and Responsibilities.** Refer to **Paragraph 1.4.1**.

1.5. Supplements. MAJCOM may supplement this volume according to AFPD 11-2, *Aircrew Operations*. These supplements will not duplicate or be less restrictive than the provisions of this instruction. Forward MAJCOM supplements to AFSOC/A3V and Air Force Flight Standards Agency (AFFSA)/XOF for approval before publication and provide AFFSA/XOF one copy after publication. File supplements according to AFI 33-360, *Publications and Management Program.*

1.6. Requisitioning Procedures. Units can download this instruction from the AFSOC/A3V Community of Practice web site. Commanders will ensure each CV-22 crew member who is designated to fly receives the applicable chapters of this publication. (T-2)

1.7. Revisions. Personnel at all echelons are encouraged to submit proposed changes IAW AFI 11-215, *Flight Manuals Program (FMP)*, through MAJCOM Stan/Eval channels to AFSOC/A3V. Use AF Form 847.

1.8. Distribution.

1.8.1. CV-22 Unit/CCs, All Levels – 1.

1.8.2. Operational File (Ops Section), All Levels – 1.

1.8.3. FCIF – 1.

1.8.4. Staff Ops Officers, All Levels – 1.

1.8.5. Mission Kits – 1.

1.8.6. Aircrew – 1.

1.9. Development of New Equipment and Procedures. Units are encouraged to suggest new equipment, methods, tactics, and procedures. Coordinate these requirements through MAJCOM and 18th Flight Test Squadron. AFSOC approval must be obtained prior to testing of new procedures or equipment. (T-1)

Chapter 2

COMMAND AND CONTROL (C2)

2.1. General. The AFSOC C2 system is based on the principles of centralized monitoring and decentralized control and execution. The result is a C2 mechanism which keeps the AFSOC Commander (CC) informed of the current status of AFSOC forces while enabling the Wing or Group Commander to exercise control over day-to-day operations.

2.1.1. Waiver request will be the responsibility of the C2 agency with the operational control of the mission. All waivers will be coordinated through Stan/Eval channels. (T-2)

2.2. Command and Control. AFSOC is designated as the controlling agency for United States Special Operations Command (USSOCOM)-assigned Air Force Special Operations Forces (SOF) aircraft, while Theater Special Operations Commands (TSOCs) have Operational Control (OPCON) of theater-based assets. (T-2) In practice, responsibility for planning and executing AFSOC missions is routinely delegated to the Wing or Group Commander. The Wing or Group Commander, in turn, exercises control of non-close- hold missions through the command post supporting the wing or group. In the event that assigned forces undergo a Change of Operational Control (CHOP), responsibility for mission monitoring passes from the wing or group C2 facility to the gaining command. (T-3) Changeover will be accomplished IAW the pertinent Operational Plan, Operational Order, or deployment or execution order. (T-2)

2.3. Waiver and Approval Authorities.

2.3.1. Wg/CCs or equivalent hold waiver/approval authority for items normally authorized at or below wing level. (T-3)

2.3.1.1. Deployments.

2.3.1.2. Air Apportionment Allocation Conference taskings.

2.3.1.3. Joint Air Apportionment Allocation Conference (JAAAC) taskings.

2.3.1.4. Joint Combined Exchange Training (JCET)/Counter Narcotics Training missions.

2.3.1.5. Other specified missions as tasked via the SOF Air Tasking Order (ATO) in Special Operations Forces Applications (SOFAPPS).

2.3.1.6. Continental United States (CONUS) and Outside the Continental United States (OCONUS) forces depart a Theater Special Operations Command (TSOC)/Joint Special Operations Air Component (JSOAC) Area of Responsibility (AOR) en route to United States Northern Command (NORTHCOM) AOR.

2.3.1.7. Air Reserve Component (ARC) forces (under Title 10).

2.3.1.8. Depart home station for AFSOC-directed contingencies/deployments/exercises (under Title 10).

2.3.2. Operational waivers will be coordinated through Stan/Eval channels (T-2) Waiver requests will normally be the responsibility of the C2 agency with the operational control of the mission. (T-2)

2.3.3. Wg/CC OPCON terminates when forces enter a TSOC/JSOAC AOR and picks up when forces exit a TSOC/JSOAC AOR.

2.4. Mission Monitoring. The AFSOC Operations Center monitors all off-station AFSOC aircraft via Theater Battle Management Core Systems (TBMCS) – Execution Status and Monitoring (ESTAT), the Global Decision Support System (GDSS2), Theater Situation Reports, and aircrew Deployed Status Reports (DSR). Aircraft equipped with Blue Force Tracker (BFT) devices are tracked near real time via the Common Operating Picture (COP). Inputs to these various tracking tools are provided by the C2 agency with OPCON.

2.4.1. PIC or mission commander flight reporting duties.

2.4.1.1. Stations With Mobility Air Forces (MAF) C2 Agency. Aircrews will provide a "30 Minute" Out Call. Transmit a UHF or VHF arrival advisory to the destination C2 agency approximately 30 minutes prior to arrival. Provide Estimated Time in Blocks (ETB). Local MAF C2 agents will enter mission data (arrival, departure, and advisory messages) in GDSS2 when applicable. Additionally, aircrews must keep their controlling C2 agency appraised of all actual takeoff and landing times, projected takeoff times, and other related information within 30 minutes after landing (T-3)

2.4.1.2. Stations Without MAF C2 Agency. Transmit mission data (arrival, departure, and advisory messages) to the controlling C2 agency, within 30 minutes after landing, by any means available. (T-3) (Preference in the following order: Defense Switched Network (DSN)/commercial telephone, high frequency (HF) phone patch, Iridium Phone). For critical C2 communications, i.e., aircraft waiver request, maintenance delay, etc., voice communications are the primary method.

2.4.1.3. Provide controlling C2 agency with daily DSR.

2.4.1.4. Reporting Agencies. See **Figure 2.1**.

Figure 2.1. Reporting Agencies.

AFSOC Operations Center		
Telephone	DSN	312-579-3290
	Commercial	850-884-3290
	Toll-Free	800-451-7705
	RSDN	579-0212
FAX	DSN	312-579-5171
	Commercial	850-884-5171
E-mail	hq.afsoc.sdo@us.af.mil	
Secure E-mail	sdo@afsoc.af.smil.mil	
AFSOC Command Center		
Telephone	DSN	312-579-8900
	Commercial	850-884-8900

	Toll-Free	800-451-7705
E-mail	afsoc.coc@us.af.mil	
Secure E-mail	afsoc.cmd.ctr@afsoc.af.smil.mil	
1 SOW		
Telephone	DSN	312-579-8100
	Commercial	850-884-8100
	Toll-Free	800-346-6679
	RSDN	579-3601
FAX	DSN	312-579-6778
	Commercial	850-884-6778
E-mail	1sow.cmd.pst1@us.af.mil	
27 SOW		
Telephone	DSN	312-681-2253
	Commercial	505-784-2253
	Toll-Free	800-346-6679
	RSDN	299-5653
FAX	DSN	312-681-6406
	Commercial	505-784-6406
E-mail	27SOWCP@us.af.mil	
RAF Mildenhall (100 ARW) CP		
Telephone	DSN	314-238-2121
	Commercial	011 (00)44-207-499/894
Eglin AFB (96 ABW) CP		
Telephone	DSN	312-875-4020
	Commercial	850-883-4020
Kadena AB (18 WG) CP		
Telephone	DSN	315-634-8516/8405
	Commercial	011-(00)81-6117
919 SOW Command Center Duke Field FL		

(Voicemail Box 101, after Midnight Central Time)		
Telephone	DSN	875-6701
	Commercial	(850) 883-6701
	Toll-Free	1-800-437-8843
E-mail	919SOW.CP.WORKFLOW@us.af.mil	
Secure E-mail	919SOWCP@afmc.af.smil.mil	
193 SOW		
Telephone	DSN	312-423-2249/2250
	Commercial	717-948-2249/2250
Fax	DSN	312-423-2402
	Commercial	717-948-2402
E-mail	193sow.cp.omb@ang.af.mil	
Secure E-mail	193sow.cp@ang.af.smil.mil	

2.5. Designation of a COMAFSOF. The Commander, USSOCOM, or TSOC Commander may designate a COMAFSOF. This should be done in writing, and the designation letter will include the individual by name, and the geographic area of authority. (T-2) In the absence of a designated COMAFSOF, AFSOC/A3 may grant COMAFSOF waiver authority to an individual in writing. (T-2) Update the designation letter to reflect personnel changes due to prolonged deployments.

2.6. Aircraft Commander Responsibility and Authority. A PIC is designated for all flights on the MAJCOM-approved flight authorization. In addition to AFI 11-202, Vol 3, PICs are:

2.6.1. In command of all persons aboard the aircraft.

2.6.2. Responsible for the welfare of their crew and the safe accomplishment of the mission.

2.6.3. The final authority for accepting a waiver affecting the crew, mission, or aircraft. (T-1)

2.6.4. Charged with keeping the applicable commander informed of mission progress and difficulties.

2.6.5. Responsible for the timely reporting of aircraft movements in the absence of a mission commander.

2.6.6. For required maintenance support when away from home station, PICs will coordinate with A4 Combat Logistics Operations (CLO). (T-2) CLO may be contacted at: DSN 579-8925/8935, commercial 850-884-8925, 1-800-451-7705 or email **623.AOC.CLO@us.af.mil.**

2.7. Mission Commander. A Mission Commander will be designated when more than one aircraft or crew is deployed away from home station for training, exercise, or other operations. (T-2) The Mission Commander will be rated, and should be a field grade officer. (T-3) The

Mission Commander may be a primary crew member for exercises when the unit commander so designates. Mission Commander duties include, but are not limited to:

2.7.1. Briefing crews on local operating procedures. (T-3)

2.7.2. Coordinating with Air Traffic Control (ATC), Combat Control Teams (CCT), Special Tactics (ST) Teams, range control, users, and other agencies that may have an impact on the mission. (T-3)

2.7.3. Ensuring that Drop Zones (DZ), Forward Area Refueling (FARP) sites, or Landing Zones (LZ) have current surveys (when necessary). (T-3)

2.7.4. Ensuring personnel have ample and adequate billeting, eating, and transportation arrangements. (T-3)

2.7.5. Ensuring maintenance personnel know of aircraft and fuel requirements. (T-3)

2.7.6. Submitting timely reports on aircraft movements. (T-3)

2.8. Air Mission Commander (AMC). The individual responsible for the overall employment of air assets. Designated by the mission approving official; mission complexity dictates. (T-3) The AMC should not be a primary crew member but should have access to crew communications (ICS).

2.8.1. Deputy Mission Commander (DMC). Required on all missions employing a dedicated AMC. (T-3) The DMC assumes command if conditions prevent the AMC from controlling the mission. The DMC may be a primary crew member, and is usually the Formation Commander. The DMC will not be on the same aircraft as the AMC.

2.9. Flight Lead. A qualified flight lead will be designated for flights in support of multilateral operations with ground forces and is responsible for proper mission execution and other immediate action events during a formation flight. (T-3) Flight lead is responsible for delegating duties as necessary to accomplish the mission. (T-3) The flight lead normally performs duties from the formation lead position.

2.9.1. The designated flight lead will be the pilot ultimately accountable for mission accomplishment. (T-3) Hence, the flight lead will be the sole crew member responsible for interaction and coordination with outside agencies. (T-3) All crew members brief/debrief inputs, requests for information, and after action submissions will be channeled through individual Aircraft Commanders for relay to the flight lead. (T-3)

2.9.2. Formation commander. Any Aircraft Commander may be designated to act as formation commander for any formation that does not fall under the provisions of **Paragraph 2.10**.

2.10. Mission Clearance Decision. The final decision to delay a mission may be made either by the commander with directive authority or the aircraft commander when, in the opinion of either, conditions are not safe to start or continue a mission. Final responsibility for the safe conduct of the mission rests with the aircraft commander. If the aircraft commander refuses a mission, it will not depart until the conditions have been corrected or improved so that the mission can operate safely. (T-2) Another aircraft commander and aircrew will not be designated to take the same mission under the same conditions for purposes of circumventing this restriction. (T-2)

2.10.1. Diverting or rerouting a mission must be authorized by the directive authority, except in an emergency or when required by en route or terminal weather conditions or facilities. (T-3) In the event of an emergency or weather-related divert or reroute, the Mission Commander or aircraft commander must notify the controlling authority as soon as possible. (T-3)

2.10.1.1. The controlling agency directing the diversion or rerouting is responsible for ensuring destination requirements or facilities are adequate for the aircraft and aircrew. (T-3)

2.10.1.2. The aircraft commander will notify the controlling agency of any aircraft or aircrew limitations that may preclude diverting or rerouting the mission. (T-3)

2.10.1.3. When directing an aircraft to an alternate airfield, the controlling agency will ensure the aircraft commander is provided existing and forecasted weather for the alternate. (T-3)

2.11. Civilian Law Enforcement Support. It is the policy of the Department of Defense to cooperate with civilian law enforcement officials to the extent practicable. Refer to AFPD 10-8, *Defense Support of Civil Authorities (DSCA),* for USAF responsibilities for assistance to civil authorities.

Chapter 3

CREW COMPLEMENT AND MANAGEMENT

3.1. Aircrew Qualification. Each person assigned as a primary crew member must be qualified or in training for qualification in that crew position and mission. (T-2)

3.1.1. Basic proficiency crew members may perform primary crew duties on any non-mission sortie and on mission sorties (including unilateral training, joint training, and exercises) when receiving mission qualification training or evaluations under the supervision of a qualified instructor or flight examiner in their respective crew position. (T-2)

3.1.2. Mission capable crew members may perform primary crew duties on any unilateral training mission. (T-3) For other missions, the unit commander must determine the readiness of each mission capable crew member to perform primary duties. (T-3)

3.1.3. Noncurrent (NC) or unqualified (UNQ) pilots may perform crew duties only on designated training or evaluation missions under the supervision of a qualified instructor or flight examiner pilot (T-2) Both pilots must be fully qualified unless exempt by AFI 11-401, *Aviation Management.*

3.1.3.1. An instructor pilot (IP) will be in a pilot's seat:

3.1.3.1.1. When an individual who is not fully qualified in the specific type aircraft, mission, and/or maneuvers being flown occupies a pilot seat. (T-2)

3.1.3.1.2. When required by applicable operational instructions or at the discretion of the instructor pilot. (T-2)

3.1.4. NC or UNQ flight engineers may perform duties in their primary crew position on any mission when under the direct supervision of a qualified instructor or flight examiner in their respective crew position or IAW AFI 11-2CV-22, Vol 1, *CV-22 Aircrew Training*, **Chapter 4**. (T-2) When a NC or UNQ occupies a primary crew position, the crew member and the instructor or flight examiner fulfills the requirement for one primary position as specified in **Table 3.1**. (T-2)

3.1.5. For the purposes of aircraft/mission familiarization, the Group Commander, or COMAFSOF may authorize unqualified personnel to perform duties in non-pilot crew positions during flight under direct instructor/flight examiner supervision. (T-3) For crew members, the purpose of this familiarization training is to enhance crew camaraderie and to enable the individual to gain a better understanding of the crew concept and responsibilities. This training will only be conducted in permissive environments, and only when mission accomplishment is not impacted. (T-1) Comply with AFI 11-401, *Aviation Management.*

3.2. Crew Complement. The crew complement for operations is specified in the flight manual and **Table 3.1** The group CC or COMAFSOF may waive the crew complement specified in **Table 3.1** down to the flight manual minimum crew requirement (T-3)

3.2.1. Additional Crew members (ACM). An ACM is one assigned in addition to the normal aircrew complement required for a mission. Air Education Training Command (AETC) crews will refer to AFI 11-401, *Aviation Management*/AETC Supplement 1 for ACM guidance.

3.2.2. Briefings. The aircraft commander will ensure all ACMs are briefed on emergency procedures and egress. (T-3)

3.2.3. Logging of Flying Time. Log flying time IAW AFI 11-401.

Table 3.1. Crew Complement.

Mission	**Pilot**	**Copilot**	**Flight Engineer**
Engine Ground Run [1, 6]	1		1
Ferry [2]/Functional Check Flight/Contact/Instrument[3]	1	1	1
Day [4]/Night Tactical/LVA	1	1	2
Hot Refueling [5, 6, 7]	1		2
Day Remotes [8]	1	1	1

Notes:

1. Minimum crew is either 1 Pilot and 1 Flight Engineer or 2 Pilots. (T-1)

2. Crew members non-current in mission events may still conduct Functional Check Flights (FCFs).

3. This mission category includes all basic non-tactical operations to and from improved/approved areas (airfields, helipads, etc.) day and night (T-1) Qualified crews may use night vision goggles (NVGs) as appropriate to improve general flight safety.

4. At the discretion of the squadron Sq/CC, crew complement may be 2 pilots and 1 Flight Engineer (FE). Crew complement will not be reduced if actual Low Visibility Approaches (LVAs) are anticipated. (T-2)

5. Only one FE is required while operating at a location with sufficient ground crew to perform hot refueling duties.

6. A minimum of two Pilots and one Flight Engineer are required to taxi the aircraft. (T-1)

7. One flight engineer can act as the hot refueling pad supervisor during multiple position hot refueling operations.

8. The flight engineer should move to the tail scanner position for all remote area take-off and landings, at the discretion of the aircraft commander.

3.3. Interfly. Group CC or COMAFSOF is the approval authority for interfly of Air Force crew members on CV-22 aircraft under their control; otherwise, AFSOC/A3 is the approval authority. (T-2) AFSOC/ Air Education and Training Command (AETC) Memorandum of Agreement governs 58th Special Operations Wing (SOW) interfly requirements. AFSOC/Air Combat Command (ACC) Memorandum of Agreement governs ACC Weapons Instructor Course (WIC) personnel.

3.3.1. AETC and AFSOC will provide interfly for AFSOC crew members to fly on training aircraft and devices and for AETC crew members to fly on AFSOC aircraft and devices. (T-

2) The purpose of the interfly is to ensure AFSOC aircrews are familiar with current AETC training methods, procedures, and courseware; to ensure AETC aircrews are familiar with the latest AFSOC missions, tactics and needs, for augmentation, continuation training and for other purposes mutually agreed upon by the AETC/A3 and the AFSOC/A3.

3.3.2. Approval authority for aircrew interfly is the requesting and supporting operations group commander. (T-3) OG/CCs may approve interfly of basic aircrew and instructors for Flying Training Unit (FTU) and upgrade training. (T-3) Commanders will provide courtesy copy of their request and approval to AETC/A3V and A3Z and to AFSOC/A3T. (T-2) The aircrew and flight authorization will be IAW AFI 11-401. (T-1)

3.4. Intrafly. Intrafly is the exchange and/or substitution of aircrew members from separate units under the same MAJCOM to accomplish flying missions. Normally, intrafly should be used only to relieve qualified manpower shortfalls.

3.4.1. The Group Commander possessing the aircraft or COMAFSOF is approval authority for intrafly between units. (T-3)

3.5. Scheduling Restrictions. Reference AFI 11-202, Vol 3, *General Flight Rules,* and appropriate MAJCOM supplement for scheduling restrictions.

3.6. Maximum Flight Duty Period (FDP). In addition to AFI 11-202, Vol 3, and MAJCOM sup, the following restrictions apply:

3.6.1. The basic FDP is 16 hours providing no mission events (including air refueling), proficiency training, or Functional Check Flights (FCF) (including maintenance ground runs) are accomplished after 12 hours. (T-3) If the autopilot (coupled modes) is not fully operational for the required mission profile, or its use is denied for more than 4 hours, the FDP will be 12 hours. (T-3) A fully operational autopilot is defined as a system which is capable of coupling course (Electronic Navigation (ENAV) or Inertial Navigation (INAV)), speed, and altitude. For the purposes of this paragraph, NVG terminal operations to a prepared surface are not considered mission events.

3.6.2. 12 hours for training flights and FCF (including maintenance ground runs). (T-3)

3.6.3. FDP waiver approval authority is the group CC or COMAFSOF. (T-3) **Note:** Use of NVGs is authorized throughout the flight duty period.

3.7. Crew Rest. In addition to the restrictions in AFI 11-202, Vol 3, **Chapter 9**, comply with the following:

3.7.1. Crew members departing on missions scheduled to recover away from home station should be notified 24 hours before reporting for the mission. The first 12 hours are designed to allow crew members to resolve personal affairs. During these first 12 hours, a crew member may perform limited nonflying duties. The second 12-hour period is inviolate. (T-3)

3.7.2. Post-mission crew rest applies to all flying temporary duties (TDY) and begins upon the final return of an individual to home station and runs continuously until completed. Post-mission crew rest must be completed before starting predeparture crew rest for a subsequent mission. (T-3) Do not require a crew member to get immunizations, engage in ground training, perform standby or squadron duties, or perform any other activity that would violate crew rest. (T-3)

3.7.2.1. Waiver authority for post-mission crew rest is the group CC, or COMAFSOF. (T-2) Waiver requests for post-mission crew rest are considered on a case-by-case basis and only with the concurrence of the individual crew member. (T-2)

3.7.2.2. Compute post-TDY crew rest at the rate of 1 hour off for every 3 hours of TDY not to exceed 96 hours. (T-2)

3.8. Standby Duty. A period of time during which a crew may be required to launch on an anticipated mission for which a firm departure time cannot be established.

3.8.1. Aircrew members will be provided a 12-hour inviolate crew rest period preceding the start of standby duty. (T-3)

3.8.2. Aircrew not dispatched on a mission following standby duty which occurred away from home station will receive post-mission crew rest IAW **Paragraph 3.7.3**. (T-3)

3.9. Alert Duty. Refer to AFI 11-202, Vol 3, and appropriate MAJCOM Supplement.

3.10. Alert Procedures.

3.10.1. Reference AFI 11-202, Vol 3, MAJCOM Sup for FDP guidance.

3.10.2. Alert Aircraft. Complete a normal preflight and configuration check. (T-3) At the discretion of the PIC, accomplish system checks (Forward Looking Infrared (FLIR), SIRFC, etc.), fly the aircraft and accomplish a transition to airplane mode as well as an airborne Power Assurance Check prior to shutdown. (T-3) After 72 hours on alert, give maintenance access to inspect the aircraft and re-accomplish the alert acceptance procedure. (T-3) **Exception:** Maintenance is authorized to service fluid levels and minor maintenance at the discretion of the aircraft commander.

3.10.2.1. Parking. Park the alert aircraft in a designated alert parking area to expedite taxi and takeoff. (T-3)

3.10.2.2. Climatic Protective Facilities. During periods of extreme cold or severe weather, every effort should be made to shelter alert aircraft and essential equipment in a hangar to ensure operational readiness in the event of a mission. (T-3)

3.10.3. Flying Alert Aircraft. The alert aircraft may be flown for purposes other than actual alert missions provided the following conditions are complied with:

3.10.3.1. Alert requirements can be met with sufficient fuel to meet mission requirements. (T-3)

3.10.3.2. Communication contact is maintained with the primary controlling agencies. (T-3)

3.10.3.3. A qualified (for the alert mission) crew is on board. (T-3)

3.10.3.4. Controlling agencies are notified any time the alert aircraft departs the local area. (T3)

3.10.3.5. If maintenance actions are not required, the aircraft can be placed on alert once the thru-flight inspections are completed. (T-3) Limited maintenance actions can be performed at the discretion of the aircraft commander. (T-3)

3.10.4. Prior to each alert period provide the alert aircrew a general briefing. (T-3) Update the briefing every 24 hours to include weather, local Notices to Airmen (NOTAM), latest flight crew information file (FCIF) information, special instructions, and any other appropriate items. (T-3)

3.10.5. A DD Form 365-4, *Weight and Balance Clearance Form F-Transport*, will be prepared for the alert aircraft. (T-3) Canned DD Form 365-4, is authorized providing the aircraft configuration for the alert period does not change. (T-3) Alert crews are authorized to prepare a takeoff and landing data (TOLD) card using the worst weather conditions expected for the alert period. Use this TOLD for alert scrambles. (T-3) If the alert aircraft is flown for other reasons, use TOLD computed for the existing weather conditions. (T-3)

3.10.6. When an alert crew change occurs and the aircraft remains unchanged, the oncoming alert crew will complete an aircraft preflight, and as a minimum, apply power to the aircraft and check applicable items listed below. (T-3)

3.10.6.1. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*.

3.10.6.2. Interior and exterior for proper configuration and special equipment.

3.10.6.3. Fuel quantity.

3.10.6.4. Survival and emergency equipment.

3.10.6.5. Navigation and communication equipment.

3.10.6.6. Hydraulic/Oil reservoirs via Ground Refuel/Defuel Panel (GRDP).

3.10.6.7. Publications.

3.10.7. Should an aircraft remain on alert for more than 72 hours, both maintenance and operations pre-flights are required. (T-3)

3.10.8. Once the aircraft is accepted for alert, the aircraft commander will ensure an entry is made in the AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance Document*, stating as a minimum, the local date and time the aircraft operations preflight was completed. (T2)

3.10.9. Alert aircraft are off limits to all personnel except alert crew members. (T-3) No maintenance may be performed on the aircraft without the approval of the unit/mission commander. (T-3) Upon receiving orders to launch, the crew is required to check any area in which maintenance was performed prior to flight. (T-3)

3.10.10. Waiver authority for alert duty period is per AFI 11-202, Vol 3. Unless specifically mentioned above, all other alert waivers rest with group CC or COMAFSOF. (T-3)

Chapter 4

COMMAND OPERATING GUIDELINES

4.1. General. This chapter provides guidance for operations with certain degraded equipment. If the aircraft commander elects to operate with degraded equipment or aircraft systems, coordinate mission requirements (i.e., revised departure times, fuel requirements, maintenance requirements, etc.) prior to flight with the mission control agency to ensure the decision does not adversely impact follow-on missions. (T-3)

4.2. Responsibility. The final responsibility regarding required equipment for a mission rests with the aircraft commander. (T-2) If one aircraft commander accepts an aircraft to conduct a mission or mission segment with a degraded or inoperative item or system, this acceptance does not commit that aircraft commander, or a different aircraft commander, to subsequent operations with the same item or system inoperative. (T-2) When the aircraft commander considers an item essential, designate the component mission essential (ME) on the AFTO Form 781A, *Maintenance Discrepancy and Work Document*, and the item will be repaired or replaced prior to departure. (T-3)

4.2.1. If a land as soon as practical, possible or immediately condition exists while the aircraft is on the ground, a takeoff should not be attempted unless conditions warrant (threat, remote location, repair capability, etc.) (T-3)

4.2.2. The radar altimeter will be operational for LVAs, live Alternate Insertion/Extraction (AIE), and all night low-level events. (T-3)

4.3. Environmental Control System.

4.3.1. Environmental Control System (ECS). If environmental conditions permit, the aircraft may be flown without ECS. Crew comfort, type of mission, and length of mission should be considered when deciding whether or not to proceed.

4.4. Electrical Systems. If a variable frequency generator (VFG) fails at an en route stop, the mission may continue to a destination with repair capability. (T-3) Required en route stops are authorized. (T-3) Loss of a single VFG and/or converter with no other system failures will not adversely impact the electrical system and flight may be continued at the discretion of the aircraft commander.

4.5. Fuel Systems. Flight crews will reduce trapped fuel from fuel calculations and will consider center of gravity (CG) limits during degraded fuel system operations. (T-3) Consider potentially trapped fuel (CG limits) and decreased range should further degradation occur.

4.5.1. Fuel Pumps. All suction lift pumps and boost pumps will be operational prior to departure. (T-3)

4.5.2. Operations will not be conducted with any malfunction in the fuel system that affects the fuel quantity warning system, except on life or death missions.

4.6. Landing Gear. If a landing gear malfunction is encountered, that cannot be resolved with flight manual guidance, only a full stop landing will be made. (T-3) The discrepancy will be corrected prior to the next flight. (T-3) **Exception:** If repair capability does not exist and a positive determination is made that further flight can be accomplished with the gear down and

locked, the aircraft may be flown to a destination where repair capability exists provided the gear is not moved from the down and locked position. (T-3) Required en route stops are authorized. Takeoffs and landings should be minimized and made from a hover.

4.7. Navigation Systems. The aircraft will not be flown with more than one inertial navigation system (INS) failure as this would remove any redundancy in the aircraft attitude indicating system and flight control system. (T-3)

4.7.1. Global Positioning System. Without an operating GPS, (INS only) navigation in all environments is severely degraded and requires constant vigilant monitoring and frequent updates to ensure the INS solution is within operating limits. Without a functioning GPS, precision events such as LVA, night water hoist etc., should not be attempted. When GPS operation is in question, an enhanced interrupted alignment should be accomplished.

4.8. Cockpit Displays. If the standby attitude indicator, standby flight instrument (SFI), or any of the standby pitot-static instruments are inoperative, the aircraft may only be flown in day visual meteorological conditions (VMC). (T-3) Flight in night VMC is permitted if night vision goggles (NVG) are used.

4.8.1. As a minimum, one operating multi-function display (MFD) is required for each pilot's position with both Display Electronic Units (DEU) operational. (T-3) With only one DEU operational, the side corresponding to the operating DEU must have both MFDs operational and at least one on the nonoperational side. (T-3)

Chapter 5

AIRCRAFT SECURITY

5.1. General. This chapter provides guidance on aircraft security and combating the unlawful seizure (hijacking) of a CV-22 aircraft. Aircrew will actively resist all attempts to hijack aircraft. Aircrews will not release information concerning attempts or identify armed aircrew members to the public. (T-1)

5.2. Security. CV-22 aircraft are considered Protection Level (PL) 3 aircraft CONUS and OCONUS. There capability does warrant a higher protection level. This security priority designation applies to operational aircraft worldwide. Some aircraft contain equipment and documents which require protection per DOD 5200.1, *DOD Information Security Program* and AFI 31-401, *Information Security Program Management*. Requirements for protection of the aircraft in a transient status at US and foreign bases are found in AFI 31-101, *Integrated Defense.*

5.3. Procedures. Pre-mission planning should ensure that adequate en route security is available. The amount of protection required will vary, depending on the location and ground time. The aircraft commander will receive a threat assessment and security capability evaluation briefing at home station and can receive updates at en route command posts. (T-3) During scheduled and unscheduled landings at non-USAF installations, the aircraft commander will assess the situation and take the following actions, if necessary:

5.3.1. Area Patrol. Obtain area patrol coverage from local security forces to include backup response. (T-3) If local authorities request payment for this service, use AF Form 15, *USAF Invoice*. (T-3) If unable to obtain local security forces, direct armed crew members to remain with the aircraft to maintain surveillance over aircraft entrances and activities in the vicinity of the aircraft. (T-3) Acquire a means to report suspicious or hostile activity to security forces (e.g., land mobile radio). (T-3)

5.3.2. Departure which extends FDP or without crew rest. If local security forces are unacceptable/unavailable and the crew is not augmented with security forces, the OG/CC or COMAFSOF may extend maximum FDP up to 2 hours provided the mission requirements justify the risk. (T-3) If unable to depart the location due to a system malfunction, coordinate through home base channels to acquire security support.

5.4. Arming of Crew Members. Unit commanders may direct arming of crew members as deemed necessary by mission threat analysis. During all operations where weapons are on board, arm a weapon qualified aircrew member. (T-3) Protect these weapons and others installed IAW AFI 31-117, *Arming and Use of Force by Air Force Personnel* and AFMAN 31229, *USAF Weapons Handling Manual.*

5.4.1. Loading and Transfer of Weapons. Load and unload weapons at approved clearing barrels, if available. (T-3) Do not use a hand-to-hand transfer of loaded weapons to another crew member; place the weapon on a flat surface. (T-3)

5.4.2. Wearing of Weapons. Wear weapons in holsters. (T-3) If possible, conceal weapons to protect the identity of armed crew members. Do not wear weapons off the flight line except to and from operations, armories, and other facilities associated with aircrew activities (e.g., base operations, passenger terminals, flight line cafeteria, etc.). (T-3) When an aircraft

is located outside the United States in a foreign country, do not carry any weapon off the aircraft unless the pertinent Air Force MAJCOM or combatant commander authorized the bearing of firearms. (T2)

5.4.3. Weapons Storage In-Flight. Arm crew members before beginning preflight or onload duties. (T-3) When no passengers are aboard, weapons may be stored in a gun box in flight. Re-arm before landing. Do not unload weapons when placing them in a gun box. (T-3)

5.4.4. Weapons Storage at Deployed Location. During crew rest, store weapons in the most secure facility available, normally the base armory. (T-3) If a weapons storage facility is unavailable or the country prohibits or restricts the entry of weapons, secure firearms and ammunition in the gun box. (T-3)

5.4.5. Aircraft Without a Secure Gun Box. If an aircraft without a gun box must remain overnight at a location where a government-owned storage facility is unavailable, use the nearest acceptable facility. (T-3) Acceptable storage facilities are US and allied military services armories, US Reserve and National Guard armories, and US civil law enforcement armories. If none of these are available, or the aircraft commander believes security of weapons may be compromised, secure the weapons in quarters, but one armed crew member must remain with the weapons. (T-3)

5.4.6. Passengers will not carry weapons or ammunition on their person or in hand carried baggage aboard the aircraft except combat personnel during operational missions, special agents, guards of the Secret Service or State Department, and other individuals specifically authorized to carry a weapon. (T-3)

5.4.6.1. If any of the above personnel need to clear their weapons, direct them to use the following procedures, (T-3):

5.4.6.1.1. Move to a safe, clear area at least 50 feet (ft) from any aircraft, equipment, and personnel before un-holstering or un-slinging any weapon.

5.4.6.1.2. Clear weapons IAW standard safety procedures.

5.4.7. Ramp Mounted Weapon System (RMWS) Custodial Responsibility during Off-Station Training Missions. The aircraft commander will assume custodial responsibility, delegated to the flight engineer, of the RMWS during off-station training missions that require the RMWS to be installed, and live-fire operations are not anticipated. (T-3) This responsibility includes remove/install, pre-flight, post-flight, and storage of the RMWS. Prior to departure, the FE will utilize an AF Form 1297, *Temporary Issue Receipt*, to sign out the weapon from weapons maintenance personnel. Weapons storage will be IAW **Paragraph 5.4.4/5.4.5**. (T-3)

5.4.7.1. If live-fire operations are anticipated during off-station training missions, weapons maintenance personnel will assume custodial responsibility and perform all required maintenance for the RMWS. (T-3)

5.5. General Hijacking Guidance. (Ref. IAW AFI 13-207, *Preventing and Resisting Aircraft Piracy (Hijacking)*).

5.6. Aircraft Force Protection Risk Assessment Matrix. The aircraft commander may use **Table 5.1** to help assess the risk to parked aircraft unattended by crew when located at overseas civilian airfields. A cumulative score of less than 55 suggests that normal unmanned aircraft

security measures may be adequate. A score of 55 to 80 suggests that adequate security could be provided by deployed US ground personnel working 24-hour operations. If the cumulative score is greater than 80, commanders should consider deploying or using contractor security personnel. Consideration of **Table 5.1** is not intended to preclude consideration of other possible factors or supplant the discretion of the aircraft commander's judgment and discretion in meeting his responsibility to ensure adequate aircraft security measures will be accomplished. During unscheduled or emergency landings, the aircraft commander should contact the US Embassy or United States Defense Attaché Office (USDAO) for security assistance.

Table 5.1. Aircraft Force Protection Risk Assessment Matrix.

Factors	**0 Points**	**5 Points**	**10 Points**	**15 Points**
The local terrorist threat is currently: (1)	Negligible	Low	Medium (3)	High (3)
The local mob violence threat is currently: (1)	Negligible	Low	Medium (3)	High (3)
Installation/airport security services are:	Provided by host military forces only	Provided by host military and contract security forces	Contract security forces only	Not available (3)
Host security forces control entry:	The flightline and installation/airport	To the flightline only	To the installation/ airport only	To neither the flightline nor the installation/ airport (3)
There is perimeter fencing or barriers around:	The flightline and installation/airport	The flightline only	The installation/ airport only	Neither the flightline nor the installation/ airport (3)
Host security forces will provide ____ to guard the aircraft	An armed sentry	An unarmed sentry	Random security patrol coverage only	No sentry or Random patrol coverage (3)
Host security forces will ____ security incidents involving the aircraft	Provide armed response to	Provide unarmed response to	Notify civilian authorities of	Notify the PIC of (3)
The aircraft will be parked:		Separate from host military and civilian aircraft	Among other host military aircraft only	Among civilian aircraft

Factors	0 Points	5 Points	10 Points	15 Points
The aircraft will ____ illuminated during the hours of darkness (2)		Be adequately	Be marginally	Not be (3)
Total Points:				

1. Derive the local threat from valid intelligence sources only.

2. "Adequate lighting" is equal to the illumination provided by one standard USAF light cart.

3. If a security response team and security patrol is not present, commanders should consider employing or contracting security personnel.

Chapter 6

MISSION PREPARATION

6.1. Flight Planning Systems. The primary flight/mission planning system is the Special Operations Forces Planning and Rehearsal System (SOFPARS). (T-2) SOFPARS is a subset of the Air Force Mission Support System (AFMSS) that includes the Portable Flight Planning Software (PFPS). The core mission planning software in conjunction with V-22-specific modules and hardware interfaces is known as the V-22 Mission Planning System (VMPS). Upgraded or new versions of SOFPARS and VMPS will be released and authorized by the AFSOC/A3 for use after applicable testing has been completed (OPR: AFSOC Computer Systems Flight/Digital Dagger (CSF/SCP)). (T-1) **Note:** Charts are defined as flight information publication (FLIP) products; maps are printed from mission planning.

6.1.1. Electronic Data Transfer. Aircrews will not use unapproved versions of any system to load aircraft avionics without AFSOC CSF/SCP approval. (T-1) AFSOC CSF/SCP will periodically publish a listing of approved systems.

6.2. Coordinates. The following procedures will be used: **Note:** Aircrew will confirm a common datum with their supported personnel during the mission planning process. Failure to plan navigation/LZ using a common datum may result in errors of up to several miles. Computer-based mission planning systems and aircraft navigation systems generally use WGS84 as reference datum. Attempt to comply with CJCSI 3900.01C, 30 June 2007 whenever possible to minimize confusion. WGS84 is the official DOD positional reference system.

6.2.1. When reporting or receiving positions using coordinates derived from maps, charts, or related cartographic products, a complete reference to the source of the coordinates will be provided. This reference will include the datum map or chart producer, series, sheet number, edition, and date. (T-3)

6.2.2. When reporting or receiving positions using coordinates derived from non-cartographic sources such as GPS receivers, Analytical Photogrammetric Positioning Systems (APPS), or related systems, a complete reference to the source of the coordinates will be provided. This reference will include the datum, method used to derive the coordinates, agency producing the coordinates, and accuracy of the coordinates.

6.3. Flight Logs. Prepare a MAJCOM approved flight log form for each mission and include the following as a minimum: turn points, headings, distances, estimated time en route (ETE), minimum safe altitudes (MSA), and fuel computations. (T-2) A flight log is not required if the above information is included on the map.

6.4. Mission Kits.

6.4.1. The following items will be on-board the aircraft for all missions. (T-3) Publications, excluding navigation charts and FLIP, or FLIP equivalent and Flight Manual Pocket Checklists may be in electronic form as long as suitable equipment is on board and easily accessible. Local area functional check flights require only an aircraft flight manual on-board. (T-3) Aircrew members will carry a paper copy of the Flight Manual Pocket Checklist on all flights. (T-3)

6.4.2. Mission/Navigation kits weighing less than 200 lbs may be secured with seat belts. (T-3)

6.4.3. Units may supplement kits. The following items will be included. (T-3):

6.4.3.1. Aircraft Tech Orders. Flight Manual and Cargo Loading Manual.

6.4.3.2. AFI 11-202, Vol 3, *General Flight Rules.*

6.4.3.3. AFI 11-2CV-22, Vol 3**,** *CV-22 Operations Procedures.*

6.4.3.4. AF Form 15, *USAF Invoice*.

6.4.3.5. AF Form 315, *USAF Aviation Fuels Invoice*.

6.4.3.6. AF Form 457, *USAF Hazard Report*.

6.4.3.7. AF Form 651, *Hazardous Air Traffic Report (HATR).*

6.4.3.8. AF Form 664, *Aircraft Fuels/Ground Servicing Documentation Log.*

6.4.3.9. AF Form 711 (series), *USAF Mishap Report.*

6.4.3.10. AFSOC Form 97, *Incident Report or appropriate MAJCOM report*.

6.4.3.11. DD Form 175, *Military Flight Plan*

6.4.3.12. DD 1801, *International Flight Plan*.

6.4.3.13. DOD FLIP instrument flight rules (IFR) Supplement (one each).

6.4.3.14. DOD FLIP visual flight rules (VFR) Supplement (one each).

6.4.3.15. DOD FLIP Flight Information Handbook (one each).

6.4.3.16. DOD FLIP IFR En Route Charts (one set for area of operation).

6.4.3.17. DOD FLIP Instrument Approach Procedures (two sets for area of operation).

6.4.3.18. Maps and Charts (including VFR sectional aeronautical charts as required).

6.5. Weather Planning.

6.5.1. Operations Group Commanders may establish minimum weather criteria (ceiling or visibility) less than day minimums for flights during which only hovering maneuvers will be performed (e.g., hover checks, Operational Check Flight (OCF), FCF). (T-3)

6.5.2. Weather Minimums:

6.5.2.1. VFR Minimums. Comply with AFI 11-202, Vol 3, weather minimums unless local or theater specific-weather minimums are more restrictive. (T-1) In the absence of more restrictive criteria, the following minimum weather criteria (ceiling/visibility) apply during all VFR operations:

6.5.2.1.1. Day/NVG.

6.5.2.1.1.1. VTOL/CONV (>60 Nacelle): 500/2 sm. (T-3)

6.5.2.1.1.2. APLN (<60 Nacelle): 1,000/3 sm. (T-3)

6.5.2.1.2. Night (Unaided, APLN/CONV/VTOL): 1,500/3 sm. (T-3)

6.5.2.1.3. TF/TA Operations During Combat or Contingency. TF/TA procedures during combat or contingency operations are allowed when weather minimums are less than stated in **Paragraph 6.5.2.1.1** with COMASFOF or equivalent approval. (T-3)

6.5.2.2. IFR Minimums. Use category A approach minimums and comply with AFI 11-202, Vol 3, helicopter weather minimums and procedures unless local or theater specific weather minimums are more restrictive. (T-2) Instrument meteorological conditions (IMC) TF flight may be accomplished on published IFR Military Training Routes (IR) or other approved, surveyed training routes.

6.6. Wind Limits.

6.6.1. Comply with limitations in CV-22 Flight Manual (T-1)

6.7. Illumination and NVG Requirements. ***WARNING:*** Lack of sufficient illumination may prevent NVG contour operations in otherwise VMC conditions. ***WARNING:*** NVGs worn in black hole conditions can lead to induced motion illusions and spatial disorientation.

6.7.1. NVG low-level operations require sufficient illumination to safely identify terrain and hazards commensurate with aircraft speed and altitude.

6.7.2. The decision on whether sufficient illumination exists to complete the mission rests with the aircraft commander.

6.7.3. Any training or operational low-level flight, as defined by **Paragraph 7.1**, planned when the effective illumination (regardless of methodology or measurement) is forecast to be less than 10%, incur greater risk; during these periods of low illumination, these missions require:

6.7.3.1. An additional level of Operational Risk Management (ORM).

6.7.3.2. For training flights: an operational TF radar or FLIR, and moving map with Digital Terrain Elevation Data (DTED) loaded are required. (T-3)

6.7.3.3. For operational flights: flight may be conducted with all systems listed in **Paragraph 6.7.3.2** degraded or inoperative, if, on a case-by-case basis, it can be determined that the increased mission risk is still commensurate with mission benefit. (T-3)

6.7.3.4. Crossing Mean Sea Level (MSL) altitudes based upon lowest altimeter setting will be calculated and annotated for climbs greater than 500 ft. (T-3)

6.8. Adverse Weather Planning. Flight in the vicinity of thunderstorms will be conducted IAW AFI 11-202, Vol 3, and appropriate MAJCOM supplement's fixed-wing procedures. (T-2)

6.8.1. Planned flight in the vicinity of thunderstorms requires an operable weather (WX) radar. (T-2)

6.8.2. Do not fly directly above (within 2,000 ft) thunderstorms or cumulonimbus clouds. If unable to clear thunderstorms or cumulonimbus clouds by at least 2,000 ft vertically, maintain the following clearance, (T-2):

6.8.2.1. 20 nm at or above FL 230.

6.8.2.2. 10 nm below FL 230.

6.8.2.3. 5 nm for tactical low-level operations. ***CAUTION:*** Aircraft damage is possible 20 nm or more from any thunderstorm.

6.8.3. Avoid prolonged flight in areas of high lightning potential, i.e., clouds within ± 5,000 ft of the freezing level or ± 8° C of the freezing level, and in any intensity of precipitation or turbulence associated with thunderstorm activity.

6.9. Fuel Planning. The following fuel planning figures are intended to meet the requirements of AFI 11-202, Vol 3. (T-2)

6.9.1. For all flights VFR or IFR, plan to land at destination in accordance with AFI 11202, Vol 3, or 1,500 pounds, whichever is greater. (T-2)

6.9.2. For flight planning purposes, fuel requirements for descent, approach, and missed-approach will be no less than 1,200 pounds. (T-2)

6.9.3. Aircraft Commanders will declare "Minimum Fuel" when fuel calculations indicate a landing at the intended destination below 1,500 lbs. (T-2) "Emergency Fuel" will be declared when fuel calculations indicate a landing at the intended destination below 1,200 lbs. (T-2)

6.10. Single Engine (OEI) Planning. For VFR operations, aircrews will mission plan to ensure their airplane (APLN) mode OEI service ceiling will provide adequate terrain clearance, or sufficient escape options, for the route to be flown should an engine fail. (T-3) OEI level flight capability in VTOL/CONV is not required when vertical takeoff and landing (VTOL)/conversion (CONV) flight will only be conducted for transitory periods in conjunction with takeoff and landing. (T-3) Group CC/COMAFSOF approval is required for extended or en route operations in VTOL/CONV if 500 ft above ground level (AGL) OEI capability is not available. (T-3)

6.11. En Route Planning. Crews should fly missions at the highest altitude commensurate with the threat environment. Where operations will be conducted below 3,000 ft AGL, the following are required on mission planning documents:

6.11.1. Emergency Safe Altitude (ESA). ESA is an altitude that will provide positive terrain clearance in IMC during situations that require the exiting of the low-level environment. (T-3) To compute ESA, add 1,000 ft (2,000 ft in mountainous terrain) to the highest obstacle or terrain feature within 10 nm of route centerline or intended flight path, rounded to the next 100-foot increment. Use of area ESA is recommended whenever possible; however, a single ESA is sufficient when there are no significant changes in topography.

6.11.2. Minimum Safe Altitude (MSA). MSA provides terrain clearance and limited threat avoidance during situations that require the interruption of low-level operations. (T-3) To compute MSA for each leg or leg segment, add 500 ft (or the planned set clearance for TF operations) to the elevation of the highest terrain or obstacle within 3 nm of route centerline or the planned flight path, and round up to the next 100-foot increment.

6.11.2.1. To compute MSA during aerial refueling, add 1,000 ft to the elevation of the highest terrain or obstacle within 5 nm of route centerline or the planned flight path, and round up to the next 100-foot increment. (T-3)

6.11.3. A properly chummed map for avoidance of all man-made obstacles. (T-3) **Note:** During training operations, higher weather or altitude minimums may be dictated by FLIP, international civil aviation organization (ICAO) procedures, or training considerations. Mountainous areas are defined as having a 500 ft change in surface altitude over 1/2 nm. ***WARNING:*** Failure to maintain an accurate altimeter setting during flight may cause lower than planned terrain clearances or impact with terrain when using the computed ESA/MSA.

6.12. Aeronautical Chart Preparation.

6.12.1. Map Selection. Maps with a scale of 1:500,000 or greater detail are required for lowlevel operations. (T-3) Maps with a scale of 1:250,000 or greater are highly desired. AFTTP 33.CV-22 *Combat Aircraft Fundamentals* contains specific map symbology and route requirements.

6.12.2. Pilots will carry a properly prepared map on all flights and ensure all maps used for flight have the most current hazards posted. (T-3) Pilots will not rely solely on the digital map for navigation when digital map hazard information does not match printed maps. Aircrew will also ensure appropriate civil airspace is annotated along their route of flight. (T-3)

6.13. Pre-Mission Briefing Requirements.

6.13.1. Use the applicable briefing guides in AFI 11-2CV-22, Vol 3, CL-1 for briefings. The aircraft commander will ensure their crews receive a briefing prior to each mission, covering all specific areas to be accomplished. (T-3) Units may convert AFI 11-2CV-22, Vol 3, CL-1 briefing items to electronic briefing formats if desired or as defined in unit standard operating procedures (SOP).

6.13.2. If critical pre-mission duties conflict with the briefing, the aircraft commander may excuse crew members. Prior to engine start the aircraft commander will give a mission brief to any excused crew members detailing all areas pertinent to their duties. (T-3)

6.13.3. The aircraft commander will brief, if known, the following factors anytime a landing in a remote landing zone is anticipated:

6.13.3.1. Weather. Determine recent weather and its effect on the landing area. Wind will be evaluated by the aircrew for its effect.

6.13.3.2. TOLD. Compute and brief applicable TOLD and power requirements for the LZ.

6.13.3.3. Approach and Departure. Brief the planned approach and departure routes as well as significant terrain features. The aircraft commander will determine and brief the type of approach to be used. Departure power considerations will be covered as well.

6.13.3.4. Surface Conditions. Brief expected surface slope and features and conditions (tall grass, plowed field, sand, etc.). Conditions conducive to low visibility approaches must be briefed.

6.13.3.5. Abort Routes. Determine null areas and escape routes. Brief abort considerations including the point at which the aircraft is committed to landing (if applicable) and formation procedures.

6.13.3.6. Personnel and Vehicles. Known personnel and equipment locations will be briefed. If vehicles or personnel are operating in the landing area, attempt to determine their effect on the LZ.

6.13.3.7. Other Hazards. Brief any other special considerations such as the hazards created by downwash during landing and takeoff.

6.13.4. Passenger Briefings.

6.13.4.1. Prior to each flight, the aircraft commander will ensure that all passengers are briefed. (T-3) When more than one flight is accomplished by the same crew and passengers, subsequent briefings are not required, except to brief route information, mission changes, etc. When additional passengers are added, brief them completely. (T-3)

6.13.4.2. In addition to the minimum briefing items contained in AFI 11-202, Vol 3, the briefing will include demonstration of seat belt and egress systems. (T-3) All overwater flights will include a briefing on personal and aircraft life support equipment; i.e., life preserver use and life rafts. (T-3)

6.14. Flight Crew Information File (FCIF). In addition to requirements listed in AFI 11202, Vol 2, the following applies:

6.14.1. Review FCIF Part B before departure on all missions and comply with MAJCOM directives. (T-2) Aircraft Commanders will ensure all crew members have read and signed off all FCIF/FCIS, operations notes, or mission specific read files. (T-3) This does not relieve individuals from ensuring that required sign-offs are completed. (T-3)

6.14.2. If electronic FCIF record is not used, i.e., Patriot Excalibur (PEX), then update FCIF Currency Record (or MAJCOM equivalent form) and squadron read file manually, if new material has been added to the FCIF since the last review. (T-2) Legibly enter the last FCIF item number, the current date, and initial the FCIF Currency Record. Initialing the FCIF Currency Record certifies review of all items.

6.14.3. The aircraft commander will ensure any crew members joining a mission en route receive an FCIF update. (T-3) Instructor pilots who fly with senior officers are responsible for briefing FCIF items. (T-3)

6.14.4. Crew members not assigned or attached to that unit will certify FCIF review by entering the last FCIF number and their initials behind their name on the file copy of the flight authorization or their ACM orders. (T-3)

6.15. Flight Plans. MAJCOM approved forms are authorized for use in lieu of DD Form 175, *Military Flight Plan,* or DD Form 1801 for local area flights that end at either the base of departure or at an installation under the operational control of the base of departure. (T-2)

6.15.1. Annotate aircraft type on all flight plans as V22. (T-2)

6.16. International Procedures. The aircraft commander will review the USAF Foreign Clearance Guide and brief crew members on applicable items before flights outside the CONUS. (T-1) Comply with customs, immigration, agriculture, immunization, and quarantine requirements. The unit dispatching the mission is responsible for border clearance and other special clearances when required. (T-3) Entry into foreign countries by personnel and

equipment is directed by military agreements, diplomatic agreements, and directives of the operational control commander, ICAO standards, and the Foreign Clearance Guide.

6.16.1. For all OCONUS or operational missions use appropriate call sign assigned via USAF Voice Call Sign Listing (VCSL). (T-2) Tactical call signs assigned via the applicable Joint Communications Electronics Operating Instruction (JCEOI) will be utilized when communicating with mission agencies. (T-2) Tactical call signs will be used on all tactical nets, regardless of that net's security. (T-2)

6.16.1.1. Transoceanic/Remote area Procedures. The following procedures will be used during ocean transits and in areas where divert locations are not immediately available.

6.16.1.2. Equal Time Points (ETP). An ETP is the point beyond which an aircraft in an emergency situation necessitating a divert would continue to the destination rather than return to the departure point. An ETP will be calculated for all flights in which flight time is greater than 2 hours between suitable landing areas using forecast winds. (T-3) ETPs will be updated every hour until reached using observed and forecast winds during flight. (T-3)

6.16.2. Remote or Island Destinations. Remote or island destinations are defined as intended landing areas that do not have suitable alternate destinations within 30 minutes of flight time at 10,000 ft MSL or en route altitude (whichever is lower) and max range airspeed.

6.16.2.1. If holding in lieu of an alternate for a remote or island destination per AFI 11-202, Vol 3, AFSOC Sup, use an additional 1,500 lbs (APLN mode) as the holding fuel in addition to all other fuel reserve/minimum fuel requirements. (T-2)

Chapter 7

GENERAL OPERATING PROCEDURES

7.1. Low-Level Operations. Low-level operations are inherently dangerous and therefore require specific planning and ORM measures to ensure safety of flight is maintained throughout the mission. This section outlines the requirements that must be met in order to fly low-level missions.

7.1.1. Geographical areas, such as range complexes, may be designated as exercise or low-level navigation areas.

7.1.1.1. Surveys. Prior to any low-level operations in non-surveyed areas, accomplish a survey of the route or area as follows. (T-3):

7.1.1.2. Conduct an extensive map study of the selected routes and areas. Annotate all man-made obstacles over 50 ft AGL (or the lowest altitude to be flown), except when below the tree line. Additionally, annotate any published low-level routes, avoid areas or other hazards within the boundaries. Use the chart updating manual (CHUM) or host nation procedures to ensure current obstacles are depicted on maps.

7.1.1.3. A highly experienced pilot selected by the unit commander or mission commander will fly the route survey during the day. The pilot will conduct a visual search of the proposed route or area at the lowest applicable altitude down to a minimum altitude of 50 ft AGL in CONV mode or 100 ft AGL in APLN mode IAW **Paragraph 7.20.2**. Check the obstacle location against map location and any additional obstacles charted.

7.1.1.4. Flight surveys are not required provided the area is within a designated training complex and the host provides suitable information.

7.1.1.5. Route or area surveys conducted by other participating aircraft may be used provided the survey information is available and flight operations are conducted no lower than the survey altitude.

7.1.1.6. If a route or area has been inactive or flight operations have not been conducted at survey minimums for 12 months, re-accomplish the survey or restrict operations to or above the lowest level flown during the 12-month period.

7.2. Master Low-Level Hazards Map. Each unit must have a master low-level hazards map (or suitable digital substitute) depicting hazards to low-flying aircraft for the local area and areas of frequent operation. (T-3) Plot them on a suitable chart and display them in the crew briefing area or maintain the master hazards files on all unit computer-aided mission planning systems. (T-3) Make changes as received and bring them to the attention of all crew members. (T-3) Review the chart/files monthly. (T-3) Update master maps monthly using the CHUM supplement (or host nation equivalent) or applicable digital updates. (T-3) Annotate the date of the update on the master map (if used). (T-3) When uncharted obstacles are found, record appropriate information (location, approximate height AGL, and MSL). (T-3) The aircraft commander will ensure this information is incorporated in the squadron planning area immediately. (T-3)

7.3. Landing Zones/Helicopter Landing Zone Survey Requirements. Refer to AFI 13217, *Drop Zone and Landing Zone Operations*, MAJCOM supplements including applicable waivers, and AFTTP 3-3.CV-22 for requirements and procedures.

7.4. Life Support Requirements. Upon arriving to the aircraft, the aircraft commander or designated representative will ensure sufficient quantities of appropriate serviceable life support, survival equipment, and protective clothing for the entire mission are aboard the aircraft. (T-3) Verify AFTO Form 46, *Prepositioned Life Support Equipment* (reflects actual equipment on board), prior to departing home station. (T-3) Life support equipment and medical kits below 200 lbs may be secured with seat belts. (T-3)

7.4.1. Aircrew members will wear life preservers and underwater breathing devices on over-water flights when route of flight is beyond gliding distance of the shore. (T-3) Passengers will have life preservers available and will be worn at the discretion of the Pilot in Command. Life rafts will be available to cover all personnel on board. (T-3) Life rafts, life preservers, and helicopter emergency egress device (HEED)/helicopter aircrew breathing device (HABD) are not required when overwater flight occurs within glide distance of land, takeoff, approach, and before landing. (T-3)

7.4.2. Survival vests will be onboard the aircraft and available to the crew for all flights and may be worn at the discretion of the aircraft commander. Individuals will wear properly equipped survival vests on all combat and contingency missions. (T-3)

7.4.3. Crew members occupying a primary crew position will have an oxygen mask/regulator connected and readily available for use before engine start through engine shutdown. (T-3) Prior to flight, crew members will accomplish a preflight of their helmet and oxygen mask, to include communications check. (T-3) Upon completion of helmet and oxygen mask preflight, cabin crew members may disconnect from aircraft oxygen system, but oxygen mask/regulator must remain readily available. (T-3)

7.4.4. CV-22 crews will use rotary wing requirements for overwater flight when altitude will be below 500 ft above water level (AWL) at any time. (T-2) In all other cases, fixed-wing requirements will be used. (T-2) See AFI 11-301, Vol 1, *Aircrew Flight Equipment (AFE) Program*, MAJCOM Sup 1, for further guidance.

7.4.5. Anti-exposure suits are worn IAW AFI 11-301, Vol 1, and applicable MAJCOM supplements.

7.4.6. Helmets must be worn during all tactical training, combat and contingency sorties. (T-3) At the discretion of the PIC, crew members may wear headsets in lieu of helmets on all other sorties. If headsets are worn, helmets, oxygen masks and regulators properly attached to the aircraft oxygen system, must be within arm's reach of cockpit crew members and attached and readily accessible to cabin crew members. (T-3)

7.5. Flying Clothing/Safety Equipment.

7.5.1. All crew members will wear the aircrew uniform and other flying clothing/equipment in accordance with AFI 11-301, Vol 1, and AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*, MAJCOM Sup 1, unless forbidden by Foreign Clearance Guide (FCG) or host nation rules.

7.5.1.1. Identification Tags. Identification tags will be worn around the neck or carried in a flight suit pocket during all flights. (T-3)

7.5.2. Eye Protection. (T-3)

7.5.2.1. Use protective goggles, plastic/shatter resistant lens glasses/sunglasses, or the helmet visor for eye protection if duties require personnel to be in close proximity of the aircraft when the proprotors are turning. Wear goggles whenever dust, sand, dirt, etc., constitute a hazard.

7.5.2.2. During all live firing of weapons from the aircraft, ensure that all personnel involved in the firing of weapons wear eye protection to include one of the following: helmet visors, shatter resistant glasses/eye protection, safety goggles, or aircrew gas mask. Glass lens eyeglasses alone do not satisfy the requirement.

7.6. Weight and Balance. If the basic weight/moment of the aircraft is changed, a new DD Form 365-4, *Weight and Balance Clearance Form F-Transport*, will be computed. (T-3) A new or corrected DD Form 365-4 need not be recomputed provided the initial takeoff gross weight (item 16) is not changed by more than 500 lbs. If the change is more than 500 lbs, the crew will modify the weight and balance using the cockpit management system (CMS). (T-3) The crew will ensure CG and weight limits are not exceeded. (T-3) These computations will be briefed during the crew brief or during flight if required. (T-3)

7.7. AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*.

7.7.1. Review the AFTO Form 781 before applying power to the aircraft or operating aircraft systems. (T-3)

7.7.2. Ensure that the USAF fuel card and/or other authorized method of payment are aboard the aircraft. (T-3)

7.7.3. The exceptional release must be signed before flight. (T-3) An approved individual (maintenance officer, maintenance superintendent, or authorized civilian) will normally sign the exceptional release. If one of these individuals is not available, the aircraft commander will sign the exceptional release. See TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, for additional guidance.

7.8. Preflight Inspections.

7.8.1. Preflight inspection should normally be accomplished by the flight engineer(s) for the assigned mission; however, pilots may perform or participate in the preflight.

7.8.2. Face-to-face turnovers between crew members are acceptable during a hot turn or when the sortie is not debriefed to maintenance.

7.8.3. During higher headquarters-directed exercises and contingency operations, any qualified aircrew may accomplish the preflight inspection and brief the oncoming crew.

7.9. Tool Kits.

7.9.1. Individual units will establish requirements for tools to be included in the kits. (T-3)

7.9.2. Flight engineers will ensure a tool kit is on board for all flights, if required. (T-3)

7.9.2.1. Tool kits will be sealed and have an inventory list for accountability. (T-3)

7.9.2.2. If the tool kit seal is broken, the aircraft commander or designated representative will inventory the kit, sign the inventory, and re-seal the tool kit. (T-3)

7.10. Checklist.

7.10.1. Notes amplifying checklist procedures and limitations may be added by the crew member. Currency of notes is the crew member's responsibility.

7.10.2. Aircrew will accomplish the Combat Ingress checklist prior to entering a non-permissive/threat environment. (T-3) Aircrew will accomplish the Combat Egress checklist after exiting a non-permissive/threat environment. (T-3)

7.11. Flight Briefings and Procedures. The following briefings and procedures are the responsibility of the aircraft commander and will be completed in addition to other briefing requirements. (T-3) Refer to the appropriate MAJCOM briefing guides for content. Crew members will not fly unless they attend the crew briefings for their mission, unless approved by unit approving authority. (T-3) When pre-mission requirements dictate, PIC may excuse certain crew members from the briefing. The PIC will ensure that all personnel not present at the crew briefing receive a face-to-face briefing prior to engine start. (T-3)

7.11.1. Departure. The pilot making the takeoff will brief the crew in accordance with information published in MAJCOM briefing guides. (T-2)

7.11.2. In-Flight. Conduct in-flight briefings, as necessary, to cover any unusual circumstances and when flight safety or other conditions require the nonstandard accomplishment of any maneuver.

7.12. Controls. A qualified pilot will be at a set of flight controls with harness fastened at all times when proprotors are turning. (T-2)

7.13. Crew Duties and Responsibilities.

7.13.1. Change of Aircraft Control. Use a statement which includes the crew position such as, "Pilot/Copilot has controls" to transfer control. (T-3) The other aircrew member will acknowledge using the crew position also such as, "Pilot/Copilot has controls". (T-3) Any crew member who is in doubt as to which pilot is controlling the aircraft should immediately query the pilots.

7.13.2. Boldface. The pilot flying normally calls for boldface procedure execution. The pilot not flying is the primary crew member responsible for executing BOLDFACE and other emergency checklist procedures that involve cockpit switches while the pilot flying maintains aircraft control and reacts appropriately. (T-2) The flight engineer, if in the cockpit, will confirm any switches prior to being actuated and will reference the checklist for guidance during the emergency. (T-2) The second flight engineer, if on board, should review the flight manual or portable electronic display device (PEDD) as appropriate.

7.14. Communications Policy.

7.14.1. Interphone Communications.

7.14.1.1. Limit intraplane transmissions to those essential for crew coordination.

7.14.1.2. Do not discuss classified information over intercommunications system (ICS) during non-secure radio transmissions. (T-2)

7.14.1.3. Non-aircrew members may monitor interphone or radio transmissions only when specifically approved by the aircraft commander. The aircraft commander will brief communications policy to these personnel prior to flight. The aircraft commander must ensure no one monitors classified information for which they are not cleared or transmits classified information over the radios. (T-2)

7.14.1.4. Clearance is required from the aircraft commander prior to going off ICS. (T-3)

7.14.2. Command Radios.

7.14.2.1. The pilot operating command radios will brief the crew on which radio is primary. (T3) All crew members will monitor the primary command radio unless specifically directed to do otherwise by the aircraft commander.

7.14.2.2. Regardless of the primary command radio, monitor ultra-high frequency (UHF) GUARD (243.0). (T-1)

7.14.2.3. Record and read back all ATC clearances except when ATC instructions require immediate execution and read back would interfere with the timely performance of aircrew duties. (T-1)

7.15. Aircraft Lighting. Operate aircraft lighting IAW AFI 11-202, Vol 3, MAJCOM supplements, and the following, except where operational mission requirements dictate otherwise. (T-3)

7.15.1. Anti-collision lights. All anti-collision lights will be operational for day or night operations. (T-1)

7.15.1.1. When flying in formation, only the trail aircraft is required to have a visible anti-collision light on.

7.15.1.2. In the event of failure of any light or all lights of the anti-collision light system after takeoff, flight may be continued.

7.15.2. An operable infra-red (IR) spotlight should be available for NVG operations.

7.16. Aircraft Taxi Obstruction Clearance Criteria. All aircrews will abide by taxi distances and restrictions per AFI 11-218, *Aircraft Operations and Movement on the Ground*, and will not taxi an aircraft within 25 ft of obstructions without wing walkers unless exempted or waived. (T2)

7.16.1. When taxi clearance is doubtful, use a wing walker. (T-3) If wing walkers are unavailable or if provided and doubt still exists as to proper clearance, deplane a crew member to ensure obstruction clearance. (T-3)

7.17. Taxiway and Runway Width Requirements. Minimum taxiway width is 20 ft, (T-2); minimum runway width for rolling takeoff, short takeoff (STO), or run on landing is 30 ft. (T-2) Minimum width for 180° turn is 35 ft. (T-2)

7.18. Arresting Cables. Taxiing over arresting cables should be done at the slowest speed possible to preclude damage to the bottom of the aircraft.

7.19. Proprotor Turning Offload and Onload Procedures. Employ the following procedures when engines are running: ***WARNING:*** Personnel will have weapons pointed down and radio

antennas collapsed prior to approaching the aircraft. (T-3) Do not approach the aircraft until cleared by the crew. (T-3) **Note:** Place one engine control lever (ECL) in START, when practical, to reduce the proprotor downwash whenever personnel are present near the aircraft. If ECL is placed in any position other than FLY, the applicable checklist will be accomplished to ensure aircraft is properly configured for takeoff. (T-2)

7.19.1. Personnel and equipment should approach to and depart between the 4 and 8 o'clock position during engine running ground operations. When using the crew door, approach to and depart from the nose of the aircraft as much as possible to stay in the pilot's field of view until clear of the aircraft. Avoid the regions directly outboard of the nacelles (3 and 9 o'clock) due to the engine exhaust deflected by the coanda system.

7.19.2. During engine running crew change /hot-turns, the enplaning crew will not approach the aircraft until it has come to a complete stop, and the ramp has been lowered. (T-3)

7.20. Altitude Restrictions.

7.20.1. Conduct all APLN mode operations at or above 500 ft AGL and CONV/VTOL mode operations above 300 ft AGL, except when lower altitudes are required for takeoff, landing, operational missions, training flights in approved surveyed areas or routes, approved exercise missions, or while conducting a route survey under day VMC. (T-3)

7.20.2. Conduct low-level sorties in mountainous terrain no lower than 300 ft modified contour or 200 ft set clearance plane (SCP) in airplane mode, 100 ft in CONV mode. (T-3) In non-mountainous flat to rolling terrain or overwater where there is a valid mission requirement, crews may descend to no lower than 100 ft AGL in APLN and 50 ft in CONV. (T-3) Limit the time at minimum altitudes to the duration required for mission accomplishment. (T-3) **Note:** Mountainous terrain is defined as having a 500 foot change in surface elevation over 1/2 nm.

7.20.3. Unaided (no NVG and no TF system). Minimum en route altitude for night navigation, both operationally and for training, is 500 ft above the highest obstacle within 3 nm (MSA). (T3)

7.20.4. Aided. NVGs and/or TF systems are the only approved methods for conducting night operations below 500 ft AGL. (T-3) Comply with the following restrictions:

7.20.4.1. Time spent at the minimum altitude should be the minimum required to defeat the threat or complete tactical proficiency training or night water operations.

7.21. Power Required for VTOL Terminal Operations Training.

7.21.1. Approach: Clear escape route – out of ground effect (OGE) hover power. Restricted escape route or potential LVA - OGE hover power plus 5%. (T-3)

7.21.2. Departure: Clear escape route – 30 foot hover power. Restricted escape route or LVTO – OGE power. (T-3)

7.22. Oxygen Requirements.

7.22.1. Comply with AFI 11-202, Vol 3, for unpressurized aircraft. (T-2)

7.22.2. Aircrew must attend physiological and hypoxia recognition/recovery training (altitude chamber or ROBD) that fulfills the requirements specified in AFI 11-403, *Aerospace Physiological Training Program*. (T-2)

7.23. Identification Friend or Foe/Selective Identification Feature (IFF/SIF). Aircraft will not depart with an inoperative IFF/SIF (if required for the mission or airspace) without the approval of ATC and the aircraft commander. (T-3) **Exception:** Formations must have at least one operational IFF/SIF per element. (T-3)

7.23.1. IFF modes 1, 2, 3A, and S codes are not classified and may be left set in the transponder. IFF Mode 4 codes must be zeroized before leaving the aircraft in an unsecured location. Use the IFF/SIF in accordance with **Table 7.1**. (T-1)

Table 7.1. Worldwide IFF Chart.

IFF Mode	NATO	LANTCOM and NOPAC	All Other Areas
1	IAW ACP 160, USAFER 60-17, NATO directives, SPINS/ATO	IAW ACP 160, U.S. Sup-1(C), NI 10-41, NI 10- 15, NR 55-68, NR 55-2, SPINS/ATO	
2	IAW ACP 160, USAFER 60-17, NATO directives, SPINS/ATO	IAW ACP 160, U.S. Sup-1(C), and ANNEX A, SPINS/ATO	
3	As directed by ATC, SPINS/ATO	As directed by ATC, SPINS/ATO	As directed by ATC, otherwise IAW ACP 160, U.S. Sup-1(C)
4	Keyed and On when required		

7.23.2. Aircrews will ensure that they have an operable Mode 4 prior to departure if the aircraft will transit an area where safe passage procedures are implemented or when required for mission accomplishment. (T-1)

7.23.2.1. If Mode 4 fails in-flight, crews may continue to their intended destination if use is no longer required. If use is required, the aircraft will land and repairs will be accomplished at the first destination where equipment, parts, and maintenance personnel are available. (T-3)

7.23.2.2. Ground and in-flight checks of the Mode 4, when conducted, are a mandatory maintenance debrief item. (T-3) Crews will annotate successful and unsuccessful interrogation of the Mode IV on AFTO Form 781A. (T-3)

7.24. Traffic Collision Avoidance System (TCAS) Operations. TCAS use is required when installed and operational. (T-3) Operate the TCAS IAW flight clearance directives and appropriate technical orders. (T-3) **Note:** This system was not designed for use in the low-level environment, but provides valuable awareness of other aircraft. Use the above/below/normal settings as appropriate for the phase of flight.

7.25. Electronic Devices. The use of electronic devices is specified in AFI 11-202, Vol 3. For electronic devices not listed, the user will provide the aircrew a letter from the Aeronautical Systems Division, Deputy for Engineering (ASC/ENAE), 2530 Loop Road West, Wright Patterson AFB (WPAFB) OH 45433-7101, DSN 785-8928 or (937) 785-8928 certifying the device is approved for airborne use. (T-3) If the aircrew detects any interference from an electronic device used aboard the aircraft, discontinue the use of this device for the duration of the flight. (T-3)

7.26. Jamming and Interference. All aircrews and other radio users must be familiar with the procedures for reporting incidents of meaconing, intrusion, jamming, and interference (MIJI) or spectrum interference (SI). (T-3) Info Air Force Special Operations Air Warfare Center (AFSOAWC) on all MIJI/SI reports. (T-1)

7.27. Aircraft Servicing and Ground Operations.

7.27.1. Conduct hot refueling IAW AFI 11-235, *Forward Area Refueling Point (FARP) Operations*, TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, and appropriate flight manuals. (T-2) The guidance in this section supplements the procedures outlined in TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, appropriate flight manuals, and checklist. A comprehensive mission briefing and strict compliance with procedures will ensure an expeditious safe refueling operation.

7.27.2. Rearming may be conducted in conjunction with hot refueling.

7.27.3. Use the following guidance for aircraft marshaling during FARP operations:

7.27.3.1. Hose deployment personnel will not be used to marshal aircraft. (T-3) When CCT/Special Tactics Squadron (STS) are responsible for primary ATC of an airfield, or are responsible for ATC operations at the FARP site, they will marshal and control all aircraft movement into and out of the FARP site. (T-3) If CCT/STS are not available, units are responsible for self-marshaling into and out of the FARP site. (T-3)

7.27.3.2. Land just prior to the FARP site and deplane a crew member to marshal the aircraft to the designated refueling point when able. (T-3)

7.27.3.3. If terrain features do not allow for landing just prior to the FARP site, aircraft will hover taxi to the designated refueling point. Be aware of proprotor downwash effects on personnel and equipment in the area.

7.27.3.4. The aircraft commander will ensure marshaling procedures outlined in the above paragraphs are briefed between the tanker and receiver aircraft prior to aircraft-to-aircraft refueling operations. (T-3) These procedures must be strictly adhered to at all times, ensuring all safety requirements are met.

7.27.4. Transmissions on other than line of sight (LOS) and satellite communication (SATCOM) radios are prohibited. (T-2)

7.27.5. Aircrews will not wear Gortex garments within 50 ft of the aircraft when refueling with low flashpoint fuels i.e., JP-4, Jet B, AVGAS etc. Refer to TO 00-25-172 for further information.

7.27.6. In the absence of qualified maintenance personnel, aircrew may service aircraft hydraulic and oil systems IAW the PEDD.

7.27.7. Personnel not directly involved in refueling operations will remain clear outside the fuel servicing safety zone. (T-2)

7.28. Forced or Precautionary Landings. If the crew becomes doubtful of the aircraft's airworthiness or encounters hazardous weather conditions preventing further flight, they should execute a precautionary landing, provided the landing conditions are not more hazardous than the in-flight situation. Aircraft security and accessibility for maintenance are secondary considerations to aircrew safety. Report all precautionary landings through the appropriate chain of command as soon as communications are established. (T-3)

7.28.1. When the forced or precautionary landing occurs at an Air Force base and the maintenance issue has been investigated, corrected, and inspected by qualified maintenance personnel and the aircraft commander has determined that no significant operating hazards exist at the departure base or en route, the aircraft commander may continue flight.

7.28.1.1. The operational squadron commander's approval is required prior to further flight where qualified USAF maintenance is not available. At the squadron commander's discretion, this approval authority may be delegated to the aircraft commander.

7.28.1.2. In the event a forced or precautionary landing occurs at a location where communications are not available, the following procedures apply:

7.28.1.2.1. Remain at the landing site and await assistance if the aircraft commander determines the aircraft is not safe for flight.

7.28.1.2.2. If a greater hazard exists to the crew or aircraft at the landing site, then continue to the nearest safe landing area. (T-3) The decision to resume flight under these circumstances should be based on a thorough evaluation of all the hazards and risks involved.

7.28.2. Precautionary Landings Due to Weather.

7.28.2.1. If deteriorating weather is encountered during VFR operations, consider reversing course, continuing under an IFR clearance or as a last resort executing a precautionary landing.

7.28.2.2. Further flight may be authorized by the aircraft commander after a precautionary landing for weather. Make a reasonable effort to notify appropriate agencies of the precautionary landing and to determine additional weather information.

7.29. En Route Navigation and Instrument Approach Minimums.

7.29.1. The aircraft navigation system is cleared for area navigation point to point (RNAV PTP) in CONUS (RNP 4) and basic area navigation (BRNAV) procedures in European airspace (RNP 5). In order to fly RNAV PTP outside the navigational aid (NAVAID) navigation criteria listed in FLIP, the GPS update function must be operational and confirmation that the INSs are accepting the GPS update. Flying or filing RNAV or GPS approaches, RNAV standard instrument departure (SID) or RNAV standard terminal arrival route (STARS) is not approved. (T-2) Additionally, PTP navigation is not allowed to any point after the initial approach fix (IAF) on instrument approaches. (T-2)

7.29.1.1. Filing /I for the suffix of the TD code on the DD Form 175 in item 3 provides maximum flexibility in the ATC structure. When filing the DD Form 1801, in item 10,

Equipment – in addition to identifying all available and serviceable communication, navigation, approach aid and surveillance equipment, inserting the character Z is equivalent to /I on the DD Form 175. In item 18, Other Information – insert RMK/PTP and NAV/RNVE99.

7.29.1.2. Without an operating GPS or GPS update function, /I may still be filed IAW GP; however, INS only navigation in all environments is severely degraded and requires constant vigilant monitoring and frequent updates to ensure the INS solution is within operating limits. An EIA should be accomplished in this situation and ENAV procedures should be the primary method of navigation.

7.29.2. With a GPS Monitor Fault posted, the GPS lateral limit associated with the current mode of flight has been exceeded and therefore RNAV procedures will revert to the ENAV capabilities of the aircraft (VOR/DME, TACAN). Refer to CV-22 Flight Manual for information on procedures. When NAVAIDs are not used as the primary method of RNAV, crews must monitor satellite and GPS status while operating under RNAV and BRNAV procedures. (T-2) **Note:** As the aircraft is not equipped with a database, extreme vigilance must be taken when entering in coordinates for a point that is not within NAVAID reception. It is also possible to be cleared to a point not filed as part of the flight plan. In this case if unable to locate the point, request clarification, request a different routing, or request a heading until you are able to locate the point.

7.29.3. Ceiling Below Minimums. If the reported ceiling is below the minimum for the approach, but the visibility value is at or above the authorized minimums before initiating an en route descent and approach, ensure fuel remaining is sufficient to accomplish the en route descent and approach, missed approach, and flight to alternate with appropriate reserves. (T-2)

7.30. Radar Altimeter Procedures.

7.30.1. During low-level operations, set the radar altimeter to no lower than 80% of intended low-level altitude. (T-3)

7.30.2. For instrument approaches, set the radar altimeter low altitude warning to the appropriate height above touchdown (HAT) or height above aerodrome (HAA) prior to the final approach fix (FAF). (T-3)

7.31. Radar Advisories. Participate to the maximum extent possible while operating in VFR or simulated IFR conditions. (T-3)

7.32. Advisory Calls. The nonflying pilot will make advisory calls to the flying pilot as follows:

7.32.1. Descent:

7.32.1.1. Transition level. (T-3)

7.32.1.2. One thousand ft above assigned altitude. (T-3)

7.32.1.3. One thousand ft above initial approach fix or holding altitude. (T-3)

7.32.2. Non-Precision Approaches:

7.32.2.1. One hundred ft above procedure turn and final approach fix altitude. (T-3)

7.32.2.2. One hundred ft above minimum descent altitude (MDA). (T-3)

7.32.2.3. "Minimums" at MDA. (T-3)

7.32.2.4. "Runway in sight." Called when sufficient visual reference with the runway environment is established and the aircraft is in a safe position to land. (T-3)

7.32.2.5. "Go around." Called at the missed approach point when visual reference with the runway environment is insufficient to continue the approach or any time the approach becomes unsafe. (T-3)

7.32.3. Precision Approaches:

7.32.3.1. One hundred ft above decision height (DH) or decision altitude. (T-3)

7.32.3.2. "Continue." Call at DH if only the approach light system is in sight and a determination cannot yet be made that the aircraft is in a position for a safe landing. (T-3) If an approach is continued below DH based on seeing the approach lights only (an approach to visibility minimums), "go-around" must be called by 100 ft if a determination to land cannot be made. (T-3)

7.32.3.3. "Land." Call at DH or later if runway environment is in sight and the aircraft is in a position for a normal landing. (T-3)

7.32.3.4. "Go around." Call at DH or later if the runway environment is not in sight or if the aircraft is not in a position for a safe landing. (T-3) If an approach is continued below DH based on seeing the approach lights only (an approach to visibility minimums), "go-around" must be called by 100 ft if a determination to land cannot be made. (T-3)

7.32.4. Climb out:

7.32.4.1. Transition altitude. (T-3)

7.32.4.2. One thousand feet below assigned altitude. (T-3)

7.32.5. Any crew member observing unannounced heading deviations greater than 10°, airspeed deviations of 10 knots, altitude deviations of 100 ft during approach or 200 ft while en route, or potential terrain or obstruction problems will immediately advise the pilot flying. (T-3) Also, announce deviations from briefed procedures for the approach being flown. (T-3)

7.33. Power Checks.

7.33.1. Aircrew will reconfirm power requirements using either the cockpit management system (CMS) or performance charts when power required is within ten (10) percent of power available. (T-3)

7.33.1.1. Takeoff and landing will be executed utilizing interim power at all times when interim power affords the greater power margin. (T-3)

7.34. Passenger Policy. DOD 4515.13-R, *Air Transportation Eligibility*, establishes criteria for passenger movement on DOD aircraft. AFI 11-401, and AFI 35-103, *Public Affairs Travel*, provide further guidance on orientation and public affairs travel. Refer to these publications directly. (T-3) When available, passengers will be manifested on a DD Form 2131, *Passenger*

Manifest. (T-3) If the DD Form 2131 is not available, annotate the passengers by any means and leave with a responsible person at the point of departure. (T-3)

7.34.1. In addition to the restrictions in AFI 11-401, during spouse orientation flights, air refueling and threat reaction maneuvers are prohibited.

7.34.2. For other orientation categories, passengers will be seated with belts fastened during threat maneuvers. (T-3)

7.34.3. Space-required. DOD 4515.13-R lists several categories of passengers who are authorized official travel on Department of Defense (DOD) aircraft. Group CC or COMAFSOF determine and approve eligibility for all space required categories, with the following exceptions:

7.34.3.1. Supported forces (Mission forces). A sub-category of space required passenger defined by this AFI as US and foreign military personnel who are an integral part of the mission being performed, functioning with the aircrew to execute this mission. This may include, but is not limited to, mission specialists and special operations forces. Approval is assumed by the mission tasking. (T-3) Manifest on DD Form 2131 according to mission. (T-3)

7.34.3.1.1. Restrictions. There are no restrictions on mission events. Passengers will be restrained by the safest means possible within mission constraints. (T-3) Reference **Paragraph 7.35**, Personnel Restraints, and **Figure 7.2**, Passenger Classification/Restraint Policy. The aircraft commander will ensure that supported forces are briefed on the mission profile and mission events before flight. (T-3)

7.34.3.2. Supporting forces. A sub-category of space-required passenger defined by this AFI as US and foreign military, DOD civilians, and US civilian employees under contract to the DOD, who directly support the mission or a deployment of an AFSOC unit. This may include, but is not limited to; maintenance, communications, intelligence, logistics, fuels, flight test personnel, unit-supporting chaplains and public affairs personnel, civilian contractors required for in-flight checks or deployment support, FAA representatives, STS, fire support officers, and other military personnel who are on board to communicate/coordinate with ground forces. Off-station travel requires travel orders. Local flights will be documented by letter of authorization from the Group CC or COMAFSOF. (T-3) **Exception**: Squadron Commanders/Mission Commanders may approve squadron assigned personnel. (T-3) Squadron/Mission Commanders may also approve maintenance personnel required for mission accomplishment. (T-3) Planners and Mission Commanders should coordinate supporting forces authorizations with the OG/CC prior to exercises whenever possible. (T-3) The 18 FLTS/CC is the approval authority for supporting forces in conjunction with test missions. (T-3) When frequent local flights are necessary, commanders may issue annual authorizations by name or Air Force Specialty Code(AFSC). (T3) When using this option, the aircraft commander will ensure that all restrictions in the following paragraph are complied with for each individual mission. (T-3) Manifest all supporting forces on DD Form 2131. (T-3)

7.34.3.2.1. Restrictions. Both pilots must be fully qualified unless excepted by AFI 11-401, **Paragraph 1.12** (Requirements for Pilots in Dual-Controlled Aircraft). (T-2) Simulated emergencies are prohibited. (T-2) **Exception:** Degraded systems required

for the purposes of a functional check flight are authorized. (T-3) In this context, personnel on board are required for mission accomplishment. Limit personnel to absolute minimum required. (T-3) Other mission events are authorized. (T-3) Passengers will be seated with belts fastened during threat maneuvers. The aircraft commander will ensure that supporting forces are briefed on the mission profile and mission events before flight. (T-3)

7.35. Passengers Occupying Crew Positions.

7.35.1. The aircraft commander may authorize passengers to sit in the center seat. (T-3)

7.35.2. AFI 11-401 governs approval for passengers to occupy a crew position with a set of flight controls.

7.35.3. Any passenger occupying a crew position must be on ICS. (T-3)

7.36. Personnel Restraints (See Table 7 2).

7.36.1. Aircrew. All personnel must be restrained by the safest means possible for the type mission being flown. (T-2) Seats will be available for all passengers not covered in **Paragraph 7.34.2**; passengers will be seated with seatbelts fastened for takeoff and landing and will not be unrestrained when any door is opened in-flight. (T-2) Additional crew members will also be seated as stated above or restrained with a restraint harness (i.e., gunner's belt) during takeoff and landing or operating near an open door. (T-2) At least one pilot will have seat belt and shoulder harness fastened when engines are running. (T-2) Crew members may perform duties that require them to be unrestrained for short periods of time, provided they are not in close proximity to an open door.

7.36.1.1. The preferred method of unsecured personnel movement in the cargo compartment for all phases of flight is with the ramp closed. If the ramp must be open for mission requirements, i.e., ramp weapon employment, terminal area operations, all passengers and crew members not required to be unsecured for the mission event (i.e., AIE) will remain restrained by either a seat belt, personal restraint device, or properly adjusted gunner's belt to prohibit inadvertent departure from the aircraft at all times with the ramp open. (T-2)

7.36.2. Combat equipped troops. When carrying troops/teams and seats/seat belts are not installed/used due to mission or aircraft load, alternate restraints will be used by those personnel. (T-3) These restraints may not protect occupants in a crash sequence as well as a seat belt, but must be of such design to keep occupants from falling out of open doors. (T-3) Each individual will have a restraint to secure them to the aircraft. (T-3)

7.36.3. Alternate loading methods used should allow seats and equipment not required for the mission to be removed. Define the cabin floor itself as the seat and either a seat belt, snap link device, tie-down strap, or similar restraining device to restrain all occupants. Brief all users on the type of restraining device installed. (T-3) **Note:** Additional aircrew may be secured with alternate restraints.

7.36.3.1. Alternate restraints will be IAW USSOCOM Manual 350-6, *Special Operations Forces Infiltration/Exfiltration Techniques*. When early release is authorized IAW USSOCOM Manual 350-6, restraints will not be removed until as late as practical prior to the landing/assault (no earlier than the 1-minute call). (T-3)

7.36.3.2. Accomplish troop security by one of the following methods in descending order of preference, (T-3):

7.36.3.2.1. Seatbelts or snap links attached to tie-down rings on the cabin floor.

7.36.3.2.2. Static Line Kit.

7.36.3.2.3. Five thousand (5,000) pound tie-down straps.

7.36.3.2.4. Woven nylon rope attached to the wall rings with carabineers.

7.36.4. Except for primary and additional aircrew and special operations forces (SOF) team members, all cabin occupants must be seated with seat belts fastened during taxi, initial takeoff, and initial approach and landing. (T-3) Passengers authorized flight on tactical missions may be secured by alternate methods for subsequent takeoffs and landings provided they do not interfere with primary crew members' duties. (T-3)

Table 7.2. Passenger Classification/Restraint Policy.

Passenger Classification	**Approval Authority**	**Restraint**	**Air Refueling**	**Tactical Events**
Space Available	Group/CC, COMAFSOF	Seat/Seat Belt	Yes *	No
Aero medical Evacuation	Group/CC, COMAFSOF	Seat/Seat Belt	Yes *	Yes*
Orientation				
Incentive Flights	See AFI 11-401, **Table 1.1**	Seat/Seat Belt	Yes*	Yes*
Distinguished Visitor (DV)	See AFI 11-401, **Table 1.1**	Seat/Seat Belt	Yes*	Yes*
Familiarization Flights	See AFI 11-401, **Table 1.1**	Seat/Seat Belt	Yes*	Yes*
Spouse	See AFI 11-401 **Table 1.1**	Seat/Seat Belt	No	No
Public Affairs Flights	See AFI 35-103	Seat/Seat Belt	Yes*	Yes*
Space Required				
Supported Forces				
US and Foreign Military Personnel	Mission Tasking Authority	Alt Load	Yes	Yes
Additional Aircrew	Aircraft Commander	Alt Load	Yes	Yes
Supporting Forces				
Maint Pers Supporting deployment	Unit/CC, Mission Commander	Seat/Seat Belt	Yes	Yes

Passenger Classification	Approval Authority	Restraint	Air Refueling	Tactical Events
Unit Assigned/Attached Pers	Unit/CC, Mission Commander	Seat/Seat Belt	Yes	Yes
Other Military Pers & DOD Civilians	Group/CC, COMAFSOF	Seat/Seat Belt	Yes	Yes
Pers Required for 18 FLTS	18 FLTS/CC	As Req	As Req	As Req
*When authorized by approving authority.				

7.37. Customs, Immigration, and Agriculture Inspections.

7.37.1. Obtain customs, agriculture, and public health clearance, as required, prior to opening any doors other than the crew door or enplaning and deplaning personnel. (T-2)

7.37.2. Proceed directly from the aircraft to customs, immigration, or agricultural inspection for processing at those stations where federal or local inspections are required. (T-2) The flight engineer or the aircraft commander completes the necessary forms before reporting to inspectors. (T-3)

7.37.3. After clearing with border clearance agencies, the pilot or flight engineer will return to the aircraft for off-loading and other post-flight procedures. (T-3)

7.37.4. A US military aircraft is a sovereign instrument. When cleared to overfly or land in foreign territory, it is US policy to assert that military aircraft are entitled to the privileges and immunities which customarily are accorded warships. These privileges and immunities include, in the absence of stipulations to the contrary, exemption from duties and taxation; immunity from search, seizure, and inspections (including customs and safety inspections); or other exercise of jurisdiction by the host nation over the aircraft, personnel, equipment, or cargo on board. USAF aircraft commanders will not authorize search, seizure, inspection, or similar exercises of jurisdiction enumerated above by foreign authorities except by direction of USAF or the American Embassy in the country concerned. (T-3)

7.37.5. The aircraft commander will not permit the inspection of their aircraft by officials of any foreign government. (T-3) If requested to do so, the aircraft commander and crew will deny access and seek aid from the senior AFSOC representative or US Embassy or consulate within the host nation. (T-3) Inform customs or other officials of the above policy and request that they confirm their request through their own government and with US Department of State representatives. (T-3) If necessary, the aircrew will seal the aircraft and enter into crew rest, and relay departure intentions, until resolution of the matter by appropriate authority. (T-3) Use communications by the fastest means available to inform command and control facilities should this situation occur. (T-3)

7.37.6. When confronted with a search request by foreign authorities, aircrews should consider the following procedures:

7.37.6.1. In most cases, search attempts may be stopped by a statement of the aircraft commander to the foreign officials that the aircraft is a sovereign instrument not subject to search without consent of USAF or the chief of mission in the country concerned.

This should be clearly conveyed in a polite manner so as not to offend foreign authorities that may honestly, but mistakenly, believe they have authority to search USAF aircraft.

7.37.6.2. If foreign authorities insist on conducting a search, the aircraft commander must negotiate to delay the search until contact is made with USAF (through MAJCOM C2) or the appropriate embassy. (T-3) The aircraft commander should unequivocally state, the aircrew has no authority to consent to the search and that they must relay the foreign request to these agencies for decision. The aircraft commander should then notify these agencies of the foreign request by the most expeditious means available. Thereafter, the aircraft commander should follow instructions provided by the appropriate embassy and USAF.

7.37.6.3. If foreign officials refuse to desist in their search request, the aircraft commander should indicate that they would prefer to fly the aircraft elsewhere (provided fuel and mechanical considerations permit a safe departure) and request permission to do so.

7.37.6.4. If permission is refused and the foreign authorities insist on forcing their way on board an aircraft, the aircraft commander should state that he/she protests the course of action being pursued and that he/she intends to notify both USAF and the appropriate American Embassy of the foreign action. The aircraft commander should then allow the foreign agents on board the aircraft, without physical resistance, and thereafter report the incident to USAF and appropriate embassy as soon as possible.

7.37.7. In all instances, specific instructions may be briefed because of sensitive cargo or equipment. These instructions and applicable provisions of classified supplements to the foreign clearance guide should be followed where applicable.

7.38. Utilization of Civilian Law Enforcement or Medical Personnel. Generally, before transporting civilian law enforcement officials or civilian medical personnel, obtain proper authorization through installation commander, MAJCOM, or USSOCOM. (T-3) Civilian law enforcement or medical personnel may be required to perform duties at an accident site. These duties may include death determination or human remains removal. Local and international laws may affect mission prosecution and should be reviewed prior to deployment or pickup of civilian personnel. The primary method of deploying or recovering civilian law enforcement or medical personnel is by landing. (T-3) Civilian law enforcement or medical personnel may be deployed and recovered by hoist provided all other transport resources have been examined and determined to be inadequate and approval is obtained from the Group CC or COMAFSOF. (T3) Prior to hoist deployment, brief civilian law enforcement or medical personnel on all applicable procedures and safety and emergency considerations involved. (T-3) If unable to contact the controlling agency for approval, the aircraft commander may approve the carrying of civilian personnel on life or death missions when it is determined that these passengers are essential for the successful completion of the mission. Commanders will not transport civilian law enforcement personnel into areas of imminent danger or where confrontation with civilian criminal targets is likely, and will not direct the action of civilian authorities in enforcing the law or making arrests. (T-1)

7.39. Crew Debriefing.

7.39.1. Training Missions. The aircraft commander will conduct the debriefing and complete the appropriate documentation. (T-3)

7.39.2. Operations Under Combat Conditions. Each aircrew participating in operations under actual combat conditions will participate in an intelligence debriefing. (T-3)

7.39.3. Commanders will ensure that all aircrews are debriefed immediately following a combat or combat support mission during which any tactics or procedures were observed that may affect other operations. (T-3)

7.39.4. The aircraft commander encountering hostile fire will submit an immediate airborne report to their controlling agency followed by a hostile fire incident report to intelligence immediately after landing. (T-3)

7.39.5. Other Missions. The aircraft commander has the responsibility of affording to each crew member the opportunity to discuss unusual aspects of the mission. (T-3) Debriefings may be formal or informal, as the situation requires.

7.40. Hazardous Material Procedures. The term hazardous material includes any material, which, because of its quantity, properties, or packaging, may endanger human life or property. Procedures in this paragraph apply whenever aircraft carry DOD Hazard Class/Division 1.1, 1.2, or 1.3 explosives, Department of Transportation (DOT) Class A and B poisons, etiological or biological research materials, radioactive materials requiring yellow III labels, and inert devices. Also included are DOD Hazard Class/Division 1.4 explosives, oxidizers, compressed gases, flammable solids and liquids, and corrosive liquids listed in AFMAN 24204(I), *Preparing Hazardous Material for Military Air Shipment.*

7.40.1. Hazmat Briefing. Reference AFMAN 24-204(I).

7.40.2. Cargo Documentation. Do not accept hazardous materials unless proper documentation, certification, and identification of cargo are provided. (T-2) This includes transportation control number entered correctly on both the cargo manifest and the Shipper's Declaration for Dangerous Goods.

7.40.3. Flight Planning. The aircraft commander (unless specifically briefed otherwise):

7.40.3.1. Enters Hazardous Cargo and the mission number in the appropriate section of the flight plan. (T-3) Use remarks section of DD Form 175, *Military Flight Plan*, information section of DD Form 1801, or ICAO *Flight Plan Form*. (T-3)

7.40.3.2. Plans the flight to minimize overflying heavily populated or otherwise critical areas. (T-2)

7.40.3.3. Prepares a departure message. (T-3) The remarks section of the departure message should include the following:

7.40.3.3.1. DOT class and DOD hazard class or division, if applicable, of hazardous material on board (Include net weight of DOT Class A or B poisons and net explosive weight of Class A or B explosives). (T-3)

7.40.3.3.2. Request for special support (e.g., isolated parking, security, technical escort teams, etc.). (T-3)

7.40.3.3.3. Inert devices (when applicable). (T-3)

7.40.3.4. If ETE is less than 1 hour, or if other circumstances preclude timely receipt at destination, notify base operations at the first intended landing, by priority telephone. (T-3)

7.40.4. Before Engine Start. Ensure placards are removed. Give the controlling agency parking location, approximate engine start time, and verify that the firefighting agency has the hazardous materials information. (T-3) If not, request the following be relayed to the firefighting agency:

7.40.4.1. DOT class of hazardous material on board and the DOD hazard class or division for explosive material on board. (T-3)

7.40.4.2. Net Explosive Weight. (T-3)

7.40.4.3. Request for isolated parking (if necessary). (T-3)

7.40.4.4. Estimated time of departure. (T-3)

7.40.5. En Route. Normal procedures apply. Avoid flying over metropolitan or otherwise critical areas. (T-3)

7.40.6. Before Landing. Accomplish the following unless specifically prohibited by the theater commander or FLIP planning:

7.40.6.1. Contact the base operations dispatcher, control tower, approach control, or other agency specified in FLIP at least 30 minutes (or as soon as practical) before estimated time of arrival (ETA) to announce that hazardous materials are on board and to verify that the appropriate base support agencies have received the departure message. (T-3) If not, transmit the mission number, ETA, and information. (T-3)

7.40.6.2. If landing at a CONUS civil airport without a tower, give the previous information to the nearest FAA flight service station (FSS). (T-2)

7.40.6.3. Request the information be relayed immediately to base operations or the civil airport manager, crash or fire protection agency, and other support activities. (T-2)

7.40.7. Parking:

7.40.7.1. DOD requires aircraft carrying DOD Hazard Class or Division 1.1, 1.2, 1.3 explosives, DoT Class A poisons, and certain biological agents and munitions be parked in areas isolated from personnel. (T-1) PICs are responsible for ensuring cargo is correctly identified to the tower and ground control. (T-1) When aircraft are not directed to an isolated area, identify the cargo again to tower or ground control. (T-1) When identification is acknowledged, the host is solely responsible for selecting the parking area. (T-1) Should host procedures be questionable, submit trip reports, as appropriate, to document such occurrences. (T-1)

7.40.7.2. The military host is responsible for ensuring aircraft are properly placarded. For non-military installations, the briefing to the aircraft commander will include placard requirements and, if required, placards will be furnished at the on load base. (T-1) The shipper must make prior arrangements with the airport manager for shipments of hazardous materials requiring placards. (T-1) The shipper is responsible for cargo identification, firefighting procedures, and isolated parking requirements. (T-1)

7.40.8. Unscheduled Landing Due to in-flight emergency (IFE). Transmit unclassified information to the appropriate air traffic control facility as follows:

7.40.8.1. Nature of emergency and intent to land. (T-3)

7.40.8.2. Aircraft position and ETA. (T-3)

7.40.8.3. Number of personnel and location in aircraft. (T-3)

7.40.8.4. Fuel on board. (T-3)

7.40.8.5. That hazardous materials are on board, location of the cargo, and applicable information. (T-3)

7.40.8.6. After Unscheduled Landing. Contact the AFSOC Command Center or theater command and control center (CCC) by telephone, HF radio, or message, giving arrival notice, hazardous materials information, and other pertinent information as required. (T-3)

7.41. Hazardous Medical Equipment:

7.41.1. Nonstandard equipment possessed by medical facilities that use AFSOC air evacuation services should be regarded as potentially hazardous. Two types of equipment are of major concern:

7.41.1.1. Electronic medical equipment produces electromagnetic interference (EMI) which is commonly beyond the limits specified by MIL STD 461A and 462, and therefore can interfere with aircraft communication and navigational equipment.

7.41.1.2. Therapeutic oxygen systems present an increased hazard of fire or explosion. A potential hazard is the inadvertent disruption of the cylinder neck, manifold, or regulator resulting in explosion and propulsion of the container or accessories.

7.41.2. For nonstandard electronic medical equipment, take the following precautions:

7.41.2.1. Pararescue personnel must inform the aircraft commander when nonstandard electronic medical equipment is brought on board the aircraft. (T-3)

7.41.2.2. The aircraft commander must be informed of the anticipated period of use of the equipment during the mission. (T-3)

7.41.2.3. The aircraft commander must be alert for any interference with aircraft communications or navigation equipment during periods of use of this equipment. (T-3)

7.41.2.4. When continuous use of the equipment is required throughout the duration of the mission, flight must be restricted to VFR conditions. (T-3) Furthermore, exercise additional caution on night VFR missions to ensure there are no adverse effects on navigational equipment. (T-3)

7.41.3. For nonstandard oxygen equipment, take the following precautions:

7.41.3.1. All compressed oxygen equipment with exposed, unprotected cylinder neck, manifold, or regulator must be completely secured from all movement in its longitudinal and lateral axes. (T-3)

7.41.3.2. Pararescue personnel must continually monitor the operation of the equipment to detect possible malfunction during exposure to altitude. (T-3)

Chapter 8

FLYING TRAINING POLICY

8.1. General. See AFI 11-2CV-22, Vol 1, *CV-22 Training*, and AFI 11-2CV-22, Vol 2, *CV-22 Evaluation Criteria*, and the applicable supplements for additional information.

8.2. Training Aircraft Not Capable of Flight. If an aircraft is not capable of departure within 4 hours after scheduled departure time, cancel the training mission unless waived by the aircraft commander. (T-3) Departure consists of actual takeoffs for assigned or planned training missions, and does not include maintenance ops checks.

8.3. Emergency Procedures. Emergency procedures are normally practiced in the aircrew training device (ATD).

8.3.1. Do not retard ECLs or fail any aircraft systems, except as required during authorized check/test flights. (T-2)

8.3.2. Simulated single engine maneuvers may be accomplished at night, with power limited verbally (ECLs remaining in fly). (T-3)

8.4. IMC TF/TA Training. ***WARNING:*** Degraded systems training will not be conducted during IMC TF/TA operations. (T-2)

8.4.1. Prior to entering IMC the aircrew must ensure the TF/TA radar and navigation systems are functioning properly. (T-2)

8.4.2. Altitude Restrictions. For IMC TF/TA en route training, the minimum altitude is 300 ft SCP, and will be conducted along a surveyed/approved route. (T-2)

8.4.3. IMC TF routes flown to a flight director (FD) approach (APPR). Approaches during training will only be conducted to surveyed/approved landing zones along specified routes. (T2) Visual contact with the ground allowing confirmation of aircraft position and drift state (by someone on the crew) will be established prior to descending below 100 ft AGL. (T-2)

8.5. Obstacle Clearance for Terminal Area Operations Training.

8.5.1. Horizontal obstacle clearance will be no less than 25 ft from the proprotor tip path plane. (T-2) Shipboard operations to marked spot cleared for V-22 may be conducted with less clearance. (T-2)

8.5.2. The aircraft commander has the ultimate responsibility for obstacle clearance and ensuring that all crew members are thoroughly briefed and aware of their duties and responsibilities involving obstacle clearance. (T-3)

8.6. Live-Hoist Training. ***WARNING:*** Personnel trained in hoist operations will assist a survivor who is not familiar with rescue hoist procedures. (T-3)

8.6.1. Restrict live-hoist training to the minimum necessary to accomplish initial qualification, re-qualification, and proficiency training. (T-3) Do not conduct live hoist training with the hoist operator's intercom inoperative. (T-3)

8.6.2. Hover altitude will be the minimum required to accomplish the mission. (T-3) When over water or over vessels, hover at the minimum altitude necessary to avoid salt spray. (T-

3) Hoist training over trees should be conducted at sites adjacent to suitable emergency landing areas. (T-3)

8.6.3. Hoist operations with or without a tag line is permissible for all devices except SKEDKO litters. (T-3) SKEDKO litters require the use of tag lines to ensure safety during hoist operations. (T-3) SKEDKO litters are to be used over land only. (T-3)

8.6.4. Squadron CC determines eligibility of personnel to ride the hoist during training. (T-3) Personnel may ride the hoist IAW the following:

8.6.4.1. Aircrew/Qualified Supported Forces. (T-3) No safety observer is required.

8.6.4.2. Other Personnel. (T-3) There will be a qualified safety observer on the ground available to ensure the survivor properly uses the rescue device. (T-3)

8.7. Evasive Maneuver Training.

8.7.1. With regard to altitude, initiate evasive maneuvers in APLN mode no lower than 200 ft above highest obstacle (AHO) and maintain a minimum of 200 ft AHO throughout the evasive maneuvering. (T-3) The minimum altitude for evasive maneuvering in CONV mode (≥ 60 nacelle) is 100 ft AHO. (T-3)

8.7.2. Pilots will make advisory calls to the crew prior to beginning the evasive maneuver. (T-3) Crew members will clear the aircraft of obstacles throughout the maneuvering. (T-3)

8.8. Electronic Countermeasures (ECM) Training Policy. All ECM software is operational software. For training, ECM software can only be used in the CONUS, and only after the signal collection risk is evaluated. Evaluate the signal collection risk through coordination with squadron intelligence personnel. Crew members will provide geographical coordinates of the intended operating area, the block of time of concern, and the frequency range of ECM operations. (T-3) After analyzing the signal collection risk, operational ECM software may be used during scheduled airborne intercept training against air, ground and sea-based threats. Use of operational software against multiple threat emitter system (MUTES) is prohibited at all times. (T-2) Accomplishing system built in test (BIT) in accordance with aircraft checklist with operational software is approved. (T-2) In all other training situations within the CONUS and in all training situations overseas only use ECM software versions specifically designated for training. (T-2)

8.8.1. Flight operations with SIRFC training software is cleared for use in designated electronic warfare ranges with appropriate approval from range controlling agency. (T-3)

8.9. Flare and Chaff Policy.

8.9.1. Dispense flares IAW controlling agency procedures and restrictions. (T-3) When over water, dispense flares at least 3 nm from any surface vessel, platform, or landmass. (T-3)

8.9.2. If a hung flare is detected, follow appropriate local procedures. If no local procedures are developed use the following:

8.9.2.1. Upon next landing and prior to entering a congested area, deplane a crew member to visually inspect dispensers to ensure that there are no hung flares. (T-3) If a hung flare is observed, contact appropriate agency, (tower, ground, command post etc.) and follow their instructions. (T-3)

8.10. Simulated Instrument Flight. The use of a hood or other artificial vision-restricting device is not authorized for any phase of flight. (T-2)

8.11. Instructor Pilot Requirement. An IP will be in a pilot's seat when an individual who is not qualified in the aircraft, mission, and/or maneuvers being flown occupies a pilot seat. (T-3); at other times required by applicable operational instructions or at the discretion of the instructor pilot. (T-3)

Chapter 9

MISSION EMPLOYMENT

9.1. Formation Flying.

9.1.1. Spacing.

9.1.1.1. During formation flight, minimum spacing is in accordance with flight manual restrictions. (T-3) Base rotor disk separation on the largest rotor span/rotor disk diameter when engaged in dissimilar formation operations. (T-3) Establish complete lateral separation (no overlap) prior to any conversion or transition in close formation. (T-3)

9.1.1.2. Maintain a minimum of 100 ft spacing during ground taxi. (T-3)

9.1.2. Dissimilar Formation. Formation flights are authorized when participating crew members are briefed and thoroughly familiar with the other aircraft's performance and tactics. (T-3)

9.1.3. Communication.

9.1.3.1. Prior to formation flight, conduct a communications check of all aircraft in the formation. (T-3)

9.1.3.2. Do not initiate formation flight without positive interplane radio communications. (T-3) **Exception:** communications out procedures. Whenever possible, dedicate one of the four primary radios to an interplane communications frequency.

9.2. Terminal Operations.

9.2.1. For the first approach into any unprepared landing zone, both pilots will display hover symbology automatically on the MFD prior to commencing a descent into the LZ. (T-3)

9.2.2. If any degradation in on-board systems is discovered which could result in loss of situational awareness during approach/hover, the aircraft commander will inform the crew. (T-3) The decision to proceed rests with the aircraft commander. (T-3)

9.2.3. When LVA conditions are expected, both pilots will have hover symbols set to automatically engage prior to commencing final approach into the LZ. (T-2) At least one pilot will have the hover page on the inboard MFD. (T-2)

9.2.4. Go-Around Calls. If any crew member calls "go-around" and the aircraft is able to safely transition to forward flight, the pilot flying shall immediately apply power and set nacelles as required to establish a climb that clears all obstacles. (T-3)

9.3. Alternate Insertion/Extraction. See AFTTP 3-3.CV-22, *Combat Aircraft Fundamentals*, for additional information. ***WARNING:*** The aft VTOL CG limit on the aircraft's flight envelope can be exceeded by as much as ten inches if proper care is not exerted during deployments/recovery operations from the ramp. In high winds, this aft CG condition can approach the absolute control limit of the aircraft. It is extremely important to ensure that the troops deplane in the proper order, and that troops remain in/near their seats until it is time for them to exit the aircraft. The aft-most troops must be the first to exit the aircraft. Only those

troops and the scanner may proceed to the rear of the aircraft. (T-3) Following the release of the first fast rope stick, the next aft most troops may proceed to the ramp. (T-3) Team members will ensure 24-27 inch spacing between each member due to CG limits. (T-3) Only three personnel at a time are allowed past the ramp hinge due to CG limits. (T-3)

9.3.1. A cutting device will be readily available to cut ropes or AIE devices in case of emergencies or rope entanglement. (T-3)

9.3.2. Equipment that is certified as training use only will not be used for live personnel. (T-3)

9.3.3. Aircrew will ensure all operations off the ramp will not exceed aircraft CG limits. (T-3)

9.3.4. Mission Briefing. Prior to deployment or pickup, the aircraft commander will ensure the appropriate briefing for the planned alternate insertion and extraction operations is completed. (T-3) Aircrew and team briefings will emphasize proper hand signals, time calls, and emergency procedures. (T-3)

9.3.5. The crew member at the deploying station will ensure the departing team members have removed any potential restraints (ICS connections, personnel restraints, etc.) prior to deploying. (T-3)

9.3.6. Hoist.

9.3.6.1. Inspect the entire length of the hoist cable any time a live-hoist is anticipated. (T-3)

9.3.6.2. Ground the hoist to discharge static electricity to prevent personnel on the ground or water from sustaining a shock. (T-3) Do not ground the hoist near spilled fuel. (T-3)

9.3.6.3. The hoist operator will wear a heavy, work-type glove or equivalent on the hand used to guide the hoist cable and have eye protection in place. (T-3)

9.3.6.4. Complete the hoist operator's checklist prior to final approach. (T-3)

9.3.6.5. If the survivor is attached to a parachute, hover at an adequate distance to prevent the rotor wash from billowing the parachute and dragging the survivor. (T-3)

9.3.6.6. Hoist Equipment.

9.3.6.6.1. Forest Penetrator.

9.3.6.6.1.1. Do not use the hoist to relay messages except when all other possible means of communications (i.e., radio, message streamer, tag line) have been exhausted. (T-3)

9.3.6.6.1.2. All crew members must be vigilant for shock loads to the cable. If shock loading is observed, cease live hoist operations. (T-3) Inspect hoist, and if necessary, replace the cable prior to the next mission. (T-3)

9.3.6.6.1.3. While conducting live hoist operations during training, if the cable contacts the aircraft, operations will cease until a visual check of the cable is complete and no defects are noted. (T-3) During contingencies the decision to

continue operations rests with the hoist operator and the pilot in command. (T-3) **Note:** During water operations, the dynamic action of waves increases the potential for shock loading. Additionally, the increased drag of the stokes litter/personnel in the water increases the total force applied to the cable.

9.3.6.6.1.4. The description and maintenance instructions for the forest penetrator are contained in TO 14S6-3-1, *Forest Penetration, Rescue Seat Assembly, PN K26-1000-5,-9 (Kaman),* and TO 00-25-245, *Operations Instructions Testing and Inspection Procedures for Personnel Safety and Rescue Equipment, Section IV.*

9.3.6.6.1.5. The forest penetrator can be used to recover unresponsive or injured personnel safely with the exception of those with back injuries.

9.3.6.6.1.6. It is possible to recover three people at once with the penetrator. However, this should only be done when time is critical since it may exceed the hoist load limit of 600 lbs.

9.3.6.6.2. Stokes Litter.

9.3.6.6.2.1. The description and maintenance instructions for the stokes litter are contained in TO 00-75-5, *Use, Inspection and Maintenance Stokes Rescue Litters*. The stokes litter is designed to hold a survivor immobile in a horizontal position. The sides of the litter protect the survivor from bumping against obstructions or the side of the aircraft during retrieval. Configure the stokes litter with the sling, flotation devices, three restraining belts, and tag line when stowed on the aircraft. (T-3)

9.3.6.6.3. Horse Collar (Rescue Strop).

9.3.6.6.3.1. The horse collar can be used for single occupant recoveries from land or water. The horse collar can only be used to recover ambulatory personnel.

9.3.6.6.4. Tag Line.

9.3.6.6.4.1. Tag Line. The tag line reduces the time spent in a hover and prevents pendulum or spinning motion during hoisting. It should be used to guide the recovery device to or from confined areas, such as ship rigging, trees, etc. It may also be used to pass messages or transfer small items to or from the aircraft.

9.3.6.6.5. Rescue Net.

9.3.6.6.5.1. The rescue net is constructed of a stainless steel tube frame and 5/16-inch polypropylene netting. The net weighs approximately 20 pounds. A sea anchor drogue is provided to position and stabilize the net and allow for flight path corrections. The sea anchor drogue may be replaced by a 10-foot line with a 3- to 5-pound bag of shot for stability. The rescue net is particularly useful for recovery of personnel not familiar with the forest penetrator and/or rescue strop. Because entry is easier and more rapid for a survivor than a forest penetrator, it is perhaps the best device for recovery of survivors from frigid waters. The disadvantage is the size of the device.

9.3.6.7. During training missions, terminate live hoisting immediately at the first indication of equipment malfunction. (T-3) If possible, return the individual to the

surface as soon as possible by lowering the device or reducing hover height. (T-3) For actual search and rescue (SAR) missions, existing circumstances must dictate actions to be taken. The hoist operator will advise the pilot, check hoist power sources and hoist controls. (T-3)

9.3.6.8. During a water hoist pickup it may be advantageous to extend the cable and displace the aircraft such that the survivor is not in an area of extreme downwash while preparing to be lifted. Once the survivor is ready for hoisting, establish the hover over the rescue device and lift the survivor(s) straight up out of the water. (T-3)

9.3.6.9. Unconscious Survivor Recovery. If it is determined that the victim is unresponsive or unable to employ the rescue device, lower someone trained in hoist operations to aid the injured or unresponsive survivor. The deployed crew member will secure the survivor for hoisting and give a thumbs up visual signal to indicate that the survivor is ready for pickup. (T-3)

9.3.7. Rappelling. ***WARNING:*** The crew member at the deploying station will ensure that the ropes reach the ground prior to final positioning of rappellers for deployment. (T-3) The crew member at the deploying station will coordinate with the pilot to ensure the aircraft maintains a hover altitude that will keep the ropes in contact with the ground. (T-3) ***WARNING:*** When an unsafe condition is encountered, stop any additional team members deploying from the aircraft. (T-3) Make no attempt to physically stop a person in the act of deploying as this may cause the person to lose grip of the rope and increase the probability of injury to the team member. (T-3)

9.3.7.1. Maximum rappelling altitude for training is 100 ft. (T-3)

9.3.7.2. Do not deploy ropes until the aircraft is in a stable hover over the intended deployment area. (T-3)

9.3.8. Fast Rope. ***WARNING:*** The aircraft commander is responsible for ensuring that all crew members are aware of the length of the ropes. (T-3) Failure to do so may result in serious injury to deploying personnel or damage to the aircraft. ***WARNING:*** When using ropes with heavy attachment hardware (such as a metal sleeve and ring), ensure all personnel are clear below the aircraft before releasing the rope. (T-3) ***WARNING:*** Fast rope must be coiled toe to head. (T3)

9.3.8.1. The aircrew will install ropes and inspect attaching points. (T-3)

9.3.8.2. Configure handrails down the sides of the cabin as described in A1-V22AB-CLG-000/1V- 22(C)B-9, *Cargo Handling Manual V-22 Tiltrotor*. (T-2)

9.3.8.3. Water Fast Rope Operations. Deploy the fast rope upon entering the insertion zone. (T3) A 2-4 knot forward drift will assist in deployment of teams and prevent them from landing on each other and possible injuries. (T-3) Once personnel are deployed, slowly climb and accelerate to allow recovery of the rope prior to high speed flight (if not released) . (T-3)

9.3.9. Special Patrol Insertion and Extraction (SPIE) Operations.

9.3.9.1. During SPIE operations do not exceed 70 knots indicated airspeed (KIAS) (50 KIAS in cold weather). (T-3)

9.3.9.2. A minimum of 200 ft of clearance will be maintained between the bottom of the SPIE assembly and any ground obstacles, tactical situation permitting. (T-3)

9.3.9.3. The aircraft will have an operable radar altimeter. (T-3)

9.3.9.4. Maximum flight time with personnel on the rope is 15 minutes. (T-3) ***WARNING*:** Extreme care must be taken while making an approach to a high hover with a very slow rate of descent during the insertion to avoid the possibility of encountering power settling. (T-3)

9.3.10. Helocast Operations. Utilize the BEFORE LANDING checklist with gear up to prepare the aircraft for a water approach. (T-3) ***CAUTION:*** Use extreme caution when silencing the landing gear warning horn to ensure the emergency blow down switch is not activated.

9.3.10.1. Safety Requirements.

9.3.10.1.1. All night water helocast approaches as well as all live deployments (day and night) require a safety boat or a hoist equipped (or extra life raft) rotary wing or tilt rotor cover ship with 30 min of loiter fuel, in radio contact, and within visual range of the operation to be present. (T-3)

9.3.10.1.2. The preferred coverage is with a safety boat present in the water operations area. (T3) The safety boat should be clearly marked (such as an IR strobe) and in communication prior to helocast operations. Safety boat location and communications plan must be coordinated prior to conducting the first low and slow. (T-3) Positive communication with the cover ship and/or safety boat is required. (T-3)

9.3.10.1.2.1. Aircraft will call ON THE APPROACH and OUT OF THE SPRAY on interplane and safety boat frequencies. (T-3)

9.3.10.1.3. If a safety boat is not available, a cover ship with an operable hoist or extra raft will suffice. (T-3) The cover ship crew must be qualified to deploy the raft or conduct hoist operations, have 1 hour of loiter time, and maintain radio contact with the helocast aircraft. (T3)

9.3.10.2. Helocast deployments will be conducted at a maximum of 10 ft above water level (AWL) and 10 KGS. (T-3) Personnel will exit the aircraft from the ramp. (T-3) The aircraft will have an operable radar altimeter and hover symbology prior to helocast operations. (T-3)

9.3.10.3. Prepare the rescue hoist for extraction to the max extent possible prior to personnel deployment in the event an injury occurs to the departing team. (T-3)

9.3.10.4. Boat Deployment. ***WARNING:*** Combat rubber raiding craft (CRRC) center of gravity limitations will be discussed during both team and aircrew briefings. (T-3) Failure to ensure adequate distribution of the team's equipment may result in an aft CG causing the craft to become near vertical during deployment. Equipment and gear must be securely attached inside the boat. (T-3)

9.3.10.4.1. Reference USSOCOM MAN 350-6, *Special Operations Forces Infiltration/ Exfiltration Techniques*, **Chapter 9/10**, for maritime operations and

USSOCOM MAN 350-4, Vol 2, *Combat Rubber Raiding Craft Operations*, for approved boats.

9.3.10.4.2. Army or Navy personnel/boat deployment limit is Sea State 4 (17-21 knots/3.8-5.0 average wave height). Reference USSOCOM MAN 350-4, Vol 2, *Sea State Chart*, Appendix D.

9.3.10.4.3. Boat/Raft configuration. The crafts may be laced to plywood or suitable material that will roll easily on the aircraft rollers. Many boat types must be partially deflated and strapped to fit within the cabin width. Compressed air may be configured to completely inflate the boat after deployment.

9.3.10.4.3.1. The boat may be loaded bow or stern first. Secure with at least two cargo tie-down straps per boat, with a short bow or stern line attached to the aircraft. (T-3)

9.3.10.4.3.2. During the approach, after completing conversion, team members and crew members will prepare the boat for drop by removing the primary cargo tie-down straps. (T-3) The bow or stern line will remain attached until pilot flying indicates the aircraft is within parameters for deployment. (T-3)

9.3.11. Belay Operations.

9.3.11.1. All loose rope will be in a weighted bag. (T-3)

9.3.11.2. The belaying person will maintain control of the rope at all times. (T-3)

9.3.11.3. All participating personnel will be secured to the aircraft. (T-3)

9.3.11.4. Do not deploy the belay equipment until established in a stable hover over the deployment area. (T-3)

9.3.11.5. Fast rope and belaying operations will not occur simultaneously off the ramp. (T-3) ***WARNING:*** When belaying equipment between 400 and 1,000 pounds from the ramp, consideration should be given to a possible rapid shift in aircraft CG. CG shift could become more profound if equipment becomes entangled and team members crowd on the ramp area.

9.4. Aerial Delivery.

9.4.1. Personnel Parachute Delivery. Personnel will exit the aircraft on the command of a qualified jumpmaster after clearance is received from the aircraft commander. (T-3) Reference USSOCOM Manual 350-3, *Airborne Operations (Parachuting).* Airdrop procedures are contained in AFTTP 3-3.CV-22.

9.5. Vehicles, Motorcycles, and All Terrain Vehicles (ATV). The A1-V22AB-CLG-000, *Cargo Handling Manual V-22 Tiltrotor*, will be referred to when loading any vehicle. (T-1) When loading and unloading vehicles, use marshaling signals IAW AFI 11218 and AFI 11-2CV-22, Vol 3, CL 1.

9.6. Weapons Employment.

9.6.1. In accordance with applicable rules of engagement, test fire aircraft weapons prior to any potential engagement. (T-3) Avoid inhabited areas. (T-3) When in formation, flight lead will brief and coordinate test firing procedures. (T-3)

9.7. Peacetime SAR On-Scene Procedures.

9.7.1. Human Remains. AFSOC and AETC crews do not remove human remains from crash or incident sites except as provided in the subparagraph below. (T-2) Do not commit resources to body removal until the mission approving or releasing authority has been informed of the request and the attendant circumstances, and has authorized the removal of the remains. (T-2)

9.7.1.1. Military Personnel. If the crash or incident site is on a military reservation or within military jurisdiction, the remains of military personnel shall be removed only with the approval of a medical officer. (T-3) In the absence of a medical officer at the crash or incident site, approval must be obtained from the proper military medical authority prior to removal of remains. (T-3) If the crash or incident site is not within military control, jurisdiction over the remains rests with the civil authorities. (T-3) In such cases, do not remove remains unless authorized by the appropriate civil official (usually the local coroner or medical examiner). (T3)

9.7.1.2. Civilian Personnel. The remains of civilian personnel employed by the military are recovered as stated above. (T-3) Remains of other civilians may be removed IAW applicable laws of the jurisdiction, after authority has been obtained. (T-3)

9.7.1.3. Exceptional Cases. Within the United States and in extreme situations where time is critical and communications are impossible, the aircraft commander may, with the approval of the appropriate civil official, remove remains and deliver them to the proper civil authorities. (T1) This procedure is authorized only if conditions already make it impossible to obtain timely approval from the mission approving or releasing authority. (T-1) Whenever this procedure is employed, the aircraft commander should comply with any state or local laws or regulations affecting the transport of human remains.

9.7.2. Civil Appointments. AFSOC personnel will not, at any time, accept appointments as deputy coroner. (T-2)

9.7.3. International Aspects. A mission requiring the removal of human remains, military or civilian, across international borders, will involve national as well as local law. (T-1) Prior to such operations, consult the United States diplomatic officials to the concerned countries to obtain necessary clearances for the operation. (T-1)

9.7.4. Safeguarding Aircraft Wreckage. Reference AFI 91-204, *Safety Investigations and Reports.* If first on the scene, establish security until properly relieved. (T-1) Guard classified matter until competent authority assumes control. Do not disturb personal effects on survivors or deceased. (T-1) Inventory and store personal effects found in the crash area. (T-1) Obtain receipts from personnel who assume custody, and retain them with inventories in the unit. (T-1)

9.7.5. Permission to Enter Private Property within the United States. Obtain written permission from the owner or person in control prior to entering private property. (T-1) However, trespass by SAR personnel is justifiable when it is necessary to save life or limb.

9.7.6. Marking Aircraft Wreckage. Obliterating or marking abandoned USAF aircraft wreckage is the responsibility of base commanders (reference AFI 91-204). (T-3) However, this function may be delegated to an AFSOC unit. (T-3) Use the following procedures:

9.7.6.1. USAF Aircraft. Mark wreckage with a yellow cross as large as the condition of the wreckage permits. (T-3) When condition of wreckage prevents a marking easily visible from the air, appropriately mark logs, rocks, and other material in the immediate area. (T-3)

9.7.6.2. Non-USAF Wreckage. Do not mark or obliterate non-USAF aircraft to guard against possible damage claims against USAF. (T-3) Paint a yellow cross on material other than aircraft parts. (T-3)

9.7.6.3. Recording Data on Wreckage. To assist aircraft accident investigations, the recovery team will prepare a written description of the aircraft remnants and their location; the location, attire, and appearance of victims and survivors; evidence of accident cause, including instrument readings, control settings, condition and attitudes of control surfaces and landing gear; and such other data that may assist in analyzing the accident. (T-3) Make every effort to preserve all aircraft papers, including flight records, charts, maintenance forms, radio logs, etc. (T-3)

9.7.7. IFF. CV-22 aircraft are authorized to use Mode 3, Code 1277, and call sign, (AF Rescue XXX {tail number}), when operating under VFR in domestic airspace and:

9.7.7.1. On an official SAR mission. (T-3)

9.7.7.2. En route to or from or within a designated search area. (T-3)

9.8. Non-Tactical Shipboard Operations.

9.8.1. Aircrews will abide by the procedures outlined in the following: JP 3-04.1, *Joint Tactics, Techniques, and Procedures for Shipboard Helicopter Operations* (Electronically or updated CD version), and AFI 11-218.

9.8.2. Currency and Qualification Training. Aircrew will conduct shipboard operations training IAW Navy/Army/Air Force Memorandum of Understanding. (T-1) Refer to AFI 11-2CV-22, Vol 1, for all training requirements.

Chapter 10

LOCAL OPERATING PROCEDURES

10.1. General.

10.1.1. Units may publish local and unique unit operating procedures as required. This chapter is strictly for local area procedures not covered in the SOP document. (T-2) If changes to the SOP are required, submit changes through squadron Stan/Eval channels for incorporation during CV-22-wide SOP re-writes.

10.1.2. These procedures may be solely contained in a unit in-flight guide or in this chapter but will not be less restrictive than items contained in this AFI or other Air Force Instructions. Items may include, but are not limited to the following:

10.1.2.1. Local terrain and weather rules.

10.1.2.2. Local area flying procedures.

10.1.2.2.1. Gunnery/ECM range procedures.

10.1.2.3. Taxi, hot gun, hot brake, hung flare or parking plans, etc.

10.1.2.4. Evacuation or dispersal plans.

10.1.2.5. Training or operational landing/AIE sites.

10.1.2.6. Noise abatement procedures.

10.1.2.7. Standard briefing items and terminology.

10.1.2.8. Standard mission folder/kneeboard items.

10.1.2.9. Mission planning factors.

10.1.2.10. Master waypoint list.

10.1.2.11. Copies of these local area procedures will be distributed to all affected aircrew members. (T-2) Forward a copy of these procedures to MAJCOM Stan/Eval. It is the unit's responsibility to ensure procedures are current and relative.

Chapter 11

DIRECT SUPPORT OPERATOR PROCEDURES

11.1. General. This volume establishes procedures for AFSOC Direct Support Operators (DSO). In addition to the duties established in applicable technical orders (TO) and other directives, the DSO will comply with the procedures and duties in this volume. (T-2) The DSO is responsible for enhancing situational awareness and providing internal, direct-threat warnings to the aircrew.

11.2. Pre-Deployment/Pre-Mission Procedures.

11.2.1. Theater Analysis. The DSO will coordinate with intelligence personnel and other agencies to obtain pertinent, current, and complete data for the area of operation. (T-3) The DSO and other aircrew, as necessary, will use obtained data for inclusion in mission planning. (T-3)

11.2.2. Mission Equipment/Materials. The DSO is responsible for coordinating with all appropriate agencies to obtain any required mission planning materials, professional gear, and Joint Threat Warning System-Air (JTWS-A) equipment. The DSO will ensure all equipment is inventoried and checked to ensure proper operation prior to deployment/flight (as required) for mission accomplishment. (T-3) **Note:** The DSO will ensure there is additional equipment (as required) to sustain mission needs for the entire deployment/flight. (T-3)

11.3. Mission Planning.

11.3.1. The DSO will coordinate with the aircrew to ensure the planned route of flight minimizes aircraft exposure to threats and the probability of detection. (T-3) The DSO will also use this information to assist the crew in assessing the survivability of the aircraft against known threats. (T-3)

11.3.2. The DSO will formulate a planned use of JTWS-A equipment and aircraft IBS receiver configuration based upon the route of flight and brief the crew on anticipated inputs in relation to the route. (T-3)

11.3.3. Training missions: The DSO will coordinate with the aircraft commander during mission planning for a combat mission profile (CMP) scenario. (T-3)

11.3.4. Briefings. The DSO will brief the crew on the following items:

11.3.4.1. Anticipated threats/enemy activity. (T-3)

11.3.4.2. Crew interaction/interphone plan. (T-3)

11.3.4.3. JTWS-A capabilities/limitations and configuration. (T-3)

11.3.4.4. Operation Security (OPSEC). (T-3)

11.3.4.5. Emergency Destruction. (T-3)

11.4. Preflight.

11.4.1. Accomplish preflight equipment installation and functional checks, as soon as possible, after mission briefing. (T-3)

11.4.2. The DSO will coordinate maintenance for JTWS-A equipment problems and keep the crew informed as to any potential mission delays or degraded mission capabilities. (T-3)

11.5. In-Flight Duties.

11.5.1. The DSO will be responsible for knowing approximate aircraft location, altitude, and crew intentions at all times. (T-3)

11.5.2. The DSO will advise the crew of any changes in the status of JTWS-A equipment prior to reaching hostile environment. (T-3)

11.5.3. The DSO will perform other duties assigned by the aircraft commander. (T-3)

11.6. Post-Mission Duties.

11.6.1. The DSO will complete debrief forms. (T-3)

11.6.2. The DSO will pass equipment discrepancies to JTWS-A maintenance. (T-3)

11.6.3. The DSO will provide technical summary (TECHSUM) inputs to supporting JTWS-A analyst. (T-3)

11.7. Augmentation. Some contingency operations may require non-aircrew personnel from other units to provide JTWS-A support. In these cases, an instructor DSO will be responsible for inputs to aircrew and for safety of augmenting personnel. (T-3)

Chapter 12

OPERATIONAL REPORTS, FORMS AND IMTS

12.1. General. This chapter contains a description of applicable reports and forms. For assistance in completing safety forms contact the wing/group, unit, or local flight safety officer.

12.2. AFSOC Form 97, *Aerospace Vehicle Battle Damage Incident Debrief/Assessment/ Repair Record,* or MAJCOM equivalent form. Refer to AFI 91-204, *Safety Investigations and Reports*, and AFI 91-204, MAJCOM supplement. MAJCOM/SE will be notified of the following high interest items: off DZ drops, insertion injuries, IFR/AR incidents, dropped objects, or any other incident which, in the judgment of the flight safety officer (FSO), needs to be reported. Use the AFSOC Form 97, or MAJCOM equivalent when reporting these incidents to MAJCOM/SE. (T2) AFI 91-204 (as supplemented) to this AFI provide policy guidance that is common to investigating and reporting all US Air Force mishaps and provide instruction for using AFSOC Form 97, or MAJCOM equivalent. Safety investigations and reports are conducted and written solely to prevent future mishaps. Safety investigations take priority over any corresponding legal investigations, except in the case of Friendly Fire mishaps or criminal investigations. (T-2)

12.3. AF Form 457, *USAF Hazard Report.* Refer to AFI 91-202, *The USAF Mishap Prevention Program*. The USAF hazard reporting system provides a means for Air Force personnel to alert supervisors and commanders to hazardous conditions requiring prompt corrective action. A hazard is any condition, act, or circumstance that jeopardizes or may jeopardize the health and wellbeing of personnel or which may result in loss, damage, or destruction of any weapons system, equipment, facility, or material resource.

12.4. AF Form 651, *Hazardous Air Traffic Report (HATR).* Refer to AFI 91-202, *The US Air Force Mishap Prevention Program*, Attachment 3.

12.4.1. The Air Force HATR program provides a means for personnel to report all near midair collisions and alleged hazardous air traffic conditions. Use information in HATR reports only for mishap prevention. AFI 91-202 lists reportable incidents.

12.4.2. Procedures:

12.4.2.1. Make an airborne report of the hazardous condition to the nearest ATC agency (e.g., center, flight service station, control tower, or aeronautical radio station), and give the following information as appropriate, (T-2):

12.4.2.1.1. Identification or call sign. (T-2)

12.4.2.1.2. Time and place (radial/distance measuring equipment (DME), position relative to the airfield, etc.). (T-2)

12.4.2.1.3. Altitude or flight level. (T-2)

12.4.2.1.4. Description of the other aircraft or vehicle. (T-2)

12.4.2.1.5. Include a verbal statement as soon as possible after occurrence that a written HATR report will be filed upon landing. (T-2) **Note:** ATC agencies (e.g., FAA, etc.) must know if an official report is being filed.

12.4.2.2. File the HATR as soon as possible (within 24 hours) using any available means of communication. (T-2) Normally, it should be filed at the base operations office at the landing airport. If this is impractical and if communications permit, notify the safety office of the Air Force base where the condition occurred, the safety office at the home station, or as prescribed by the overseas MAJCOM. In any case, provide the safety office with all available information needed to prepare AF Form 651. Turn in a completed copy of AF Form 651 to the wing/group safety office. **Note:** HATR reports are not privileged information and may be released outside the USAF.

12.4.3. Individuals submitting a HATR are granted immunity from disciplinary action provided:

12.4.3.1. Their violation was not deliberate. (T-1)

12.4.3.2. They committed no criminal offense. (T-1)

12.4.3.3. No mishap occurred. (T-1)

12.4.3.4. They properly reported the incident using the above procedures. (T-1)

12.5. AF Form 711B, *USAF Mishap Report.* Refer to AFI 91-204, *Safety Investigations and Reports.*

12.5.1. Responsibilities. Notify the appropriate authorities of any mishap involving aircraft or crew. When notified, AFSOC units will initiate investigative and reporting actions in accordance with AFI 91-204. (T-2) **Note:** Do not attempt to classify a mishap. (T-2)

12.5.2. Reportable Mishaps:

12.5.2.1. Report damage to the aircraft, or injury to the crew or passengers; as well as any damage or injury to another organization's equipment or personnel resulting from the movements or actions of an aircraft or crew. (T-2)

12.5.2.2. Report the following occurrences:

12.5.2.2.1. A physiological episode. A physiological reaction, near accident, or hazard in-flight due to medical or physiological reasons. (T-2) **Note:** In the event of a physiological episode, all crew members and passengers involved will report to a flight surgeon as soon as practical and request that an applicable MAJCOM mishap/incident report form be accomplished. (T-2) This includes:

12.5.2.2.1.1. Proven or suspected case of hypoxia.

12.5.2.2.1.2. Carbon monoxide poisoning, or other toxic exposure.

12.5.2.2.1.3. Decompression sickness due to evolved gas (bends, chokes, neurocirculatory collapse), or severe reaction to trapped gas resulting in incapacitation.

12.5.2.2.1.4. Hyperventilation.

12.5.2.2.1.5. Spatial disorientation or distraction resulting in an unusual attitude.

12.5.2.2.1.6. Loss of consciousness from any cause.

12.5.2.2.1.7. Death by natural causes of any crew member in-flight.

12.5.2.2.1.8. Alcohol intoxication and hangover (crew only).

12.5.2.2.1.9. Illness (both acute and pre-existing), including food poisoning, dehydration, myocardial infarction, seizure, and so forth.

12.5.2.2.1.10. Exposure to toxic, noxious, or irritating materials such as smoke, fumes, or liquids.

12.5.2.2.2. In-flight flameout, engine failure, required engine shutdown, suspected engine power loss, or loss of thrust sufficient to preclude maintaining level flight above minimum en route altitude (MEA). **Note:** Report failure to restart, using the criteria above.

12.5.2.2.3. Flight control malfunction resulting in an unexpected or hazardous change of flight attitude, altitude, or heading.

12.5.2.2.4. Malfunction of landing gear when difficulty is experienced using emergency system or procedures.

12.5.2.2.5. In-flight loss of all pitot-static instrument indications or all attitude or directional indications.

12.5.2.2.6. Spillage or leakage of radioactive, toxic, corrosive, or flammable material from aircraft stores or cargo.

12.5.2.2.7. All cases of departure from intended takeoff or landing surface onto adjacent surfaces.

12.5.2.2.8. Any incident which does not meet the established criteria for a reportable mishap but, in the judgment of the aircraft commander, needs to be emphasized in the interest of flight safety.

12.6. Reports of Violations/Unusual Events or Circumstances. Violations identified in AFI 11-202, Vol 3, and navigation errors (including overwater position errors exceeding 24 nm, border and ATC violations) will be reported. (T-2)

12.6.1. Include the following: factual circumstances, investigation and analysis, findings and conclusions, recommendations, and actions taken. (T-2)

12.6.1.1. Attachments should include; notification of incident, crew orders, statement of crew members (if applicable), and documenting evidence (logs, charts, etc.).

12.6.2. In addition to the information listed, the historical flight plan will be downloaded onto a floppy disk and turned in to the C2 center or owning standardization and evaluation office. (T2)

12.6.3. Send the original investigation report within 45 days to MAJCOM/IG. (T-2) AFRC units receiving alleged violations will send the original investigation through channels to arrive at AFRC/IGI within 35 days. (T-2) AFRC/IGI will send the investigation report to MAJCOM/IG within 45 days. (T-2)

12.6.4. The operational report (OPREP)-3, *Event or Incident Report*, reporting procedures for all aircraft notified of navigational errors exceeding 24 nm will be reported under AFI 10-206, *Operational Reporting*. (T2)

12.6.4.1. On notification of a navigational position error, the aircraft commander (or agency receiving notification) documents the circumstances surrounding the incident (report content below) and ensures submission of an OPREP-3 report through C2 channels. (T-2)

12.6.4.2. Include the following:

12.6.4.2.1. Name and location of unit submitting report, mission identification number, reference to related OPREPs-3, type of event (e.g., state navigation position error), date, time (Zulu), and location (e.g., ARTCC area). (T-2)

12.6.4.2.2. Description of facts and circumstances. (T-2) Include aircraft type and tail number, unit (wing/group or squadron assignment of crew), home base, route of flight, point of alleged deviation, and miles off course. (T-2)

12.6.5. The aircraft commander must keep the appropriate agencies apprised of any unusual events or circumstances impacting their missions. (T-2) Examples of reportable events include meaconing, jamming, intrusion, interception, fuel dumping, loss of multiple engines, hostile fire, injury to passengers or crew members, etc. This list is not exhaustive. Some events may require the C2 agency to forward OPREP reports to higher headquarters. The old adage, when in doubt, report it, applies.

Chapter 13

FLIGHT ENGINEER PROCEDURES AND FORMS

13.1. General. In addition to the duties listed in the flight manual, other applicable technical orders, and this AFI, the aircraft commander may assign other duties to the flight engineer, as necessary. Except for ferry flights and hostile environment repair these items need not be briefed and will be performed as normal procedures. Training requirement will be IAW AFI 112CV22, Vol 1. (T-2)

13.2. Unscheduled Maintenance. Flight engineers are not normally required to perform unscheduled maintenance actions. However, in the absence of qualified maintenance personnel the flight engineer may obtain authorization to perform the following actions (in coordination with MX personnel when available) utilizing PEDD guidance:

13.2.1. Chip detector removal, replacement and inspection. (T-3)

13.2.2. Filter removal and replacement. (T-3)

13.2.3. Basic line replacement unit (LRU) removal and replacement. (T-3)

13.2.4. Batteries. (T-3)

13.2.5. Clearing of yellow and red blade fold wing stow (BFWS) halts. (T-3)

13.2.6. Miscellaneous maintenance action. (T-3)

13.3. Authority to Clear a Red X. At en route stations, flight engineers are authorized to clear Red X symbols for intake and exhaust inspections, dust covers and plugs installed, and aircraft panels removed and installed to facilitate other maintenance. (T-3) In other situations where the aircraft is on a Red X and qualified maintenance personnel are unavailable, the flight engineer may obtain authorization to clear the Red X from the maintenance group commander, operations group commander (or designated representative), or chief of maintenance, in accordance with TO 00-20-1. Other crew members are not authorized to clear a Red X. (T-2)

13.4. In-Process Inspections. All flight engineers must be aware of their responsibility to perform in-process inspections when clearing Red X symbols. (T-2) During the assembly or reassembly of an item at those stages where further assembly will prevent the required inspection of the item, an in-process inspection will be performed. (T-2) Document the in-process inspection. (T-2) (Refer to TO 00-20-1.) Additionally, flight engineers may be required to complete the following inspections:

13.4.1. Flapping Critical Inspection.

13.4.2. Maintenance Preflight Inspections.

13.5. Refueling/Defueling. Flight engineers are normally not required to refuel, defuel, or service the aircraft; however, the flight engineer is qualified and authorized to accomplish these duties when maintenance personnel are not available. (T-3) Servicing may include hydraulic systems, oils systems, and nitrogen systems. Use the appropriate checklist during all refueling and defueling operations. (T-2) If ground support personnel are not available, the aircraft commander will designate other crew members to assist the flight engineer. (T-3)

13.6. Aircraft Configuration. Flight engineers are normally not required to configure aircraft mission equipment; however, the flight engineer is qualified and authorized to reconfigure aircraft mission equipment, as required, to accomplish the mission. (T-3) Aircraft mission equipment is defined as litters, seats, RMWS components, etc.

13.7. Forms Management. In addition to the procedures in TO 00-20-1 and AFI 11-401, the flight engineer will assist the aircraft commander in maintaining the AFTO Form 781. (T-3) Verify the exceptional release is signed before starting engines and resigned, if necessary, at en route stops. (T-3) After each flight, ensure the number of discrepancies (if any), landings, and flight duration time(s), etc., are entered on the AFTO Form 781H. (T-2) Review all AFTO Form 781A discrepancies and ensure clear, detailed entries are made, symbols, date discovered, and when discovered codes are entered for each discrepancy and the discovered blocks are signed. (T-2) IAW AFI 11-253, *Managing Off-Station Purchases of Aviation Fuel and Ground Services*, all off-station fuel purchases (to include FARP and in-flight refueling) will be logged on AF Form 664, *Aircraft Fuels/Ground Servicing Documentation Log*. (T-2)

TOD D. WOLTERS, Lt Gen, USAF
Deputy Chief of Staff for Operations

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

A1-V22AB-CLG-000/1V-22(C)B-9, *Cargo Handling Manual V-22 Tiltrotor*, 15 June 2011

AFI 10-206, *Operational Reporting*, 21 April 2010

AFI 11-2CV-22, Vol 1, *CV-22 Training*, 27 January 2011

AFI 11-2CV-22, Vol 2, *CV-22 Evaluation Criteria*, 3 February, 2011

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, 19 January 2012

AFI 11-202, Vol 1, *Aircrew Training*, 22 November 2010

AFI 11-202, Vol 2, *Aircrew Standardization/Evaluation Program*, 13 September 2010

AFI 11-202, Vol 3, *General Flight Rules*, 22 October 2010

AFI 11-215, *Flight Manuals Program (FMP)*, 22 December 2008

AFI 11-218, *Aircraft Operations and Movement on the Ground*, 28 October 2011

AFI 11-235, *Forward Area Refueling Point (FARP) Operations*, 15 December 2000

AFI 11-253, *Managing Off-Station Purchases of Aviation Fuel and Ground Services*, 19 August 2013

AFI 11-301, Vol 1, *Aircrew Flight Equipment (AFE) Program*, 25 February 2009

AFI 11-401, *Aviation Management*, 10 December 2010

AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*, 13 December 2010

AFI 11-403, *Aerospace Physiological Training Program*, 30 November 2012

AFI 11-421, *Aviation Resource Management*, 10 December 2009

AFI 13-207, *Preventing and Resisting Aircraft Piracy (Hijacking)*, 21 June 2010

AFI 13-217, *Drop Zone and Landing Zone Operations*, 10 May 2007

AFI 31-101, *Integrated Defense*, 8 October 2009

AFI 31-117, *Arming and Use of Force by Air Force Personnel*, 29 June 2012

AFI 31-401, *Information Security Program Management*, 1 November 2005

AFI 33-360, *Publications and Forms Management*, 11 April 2013

AFI 35-103, *Public Affairs Travel*, 26 January 2010

AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*, 18 July 2011

AFI 91-202, *The US Air Force Mishap Prevention Program*, 5 August 2011

AFI 91-204, *Safety Investigations and Reports*, 24 September 2008

AFI 10-206, *Operational Reporting,* 6 September 2011

AFMAN 11-217, Vol 1, *Instrument Flight Procedures,* 22 October 2010

AFMAN 11-217, Vol 2, *Instrument Flight Procedures,* 22 October 2010

AFMAN 24-204(I), *Preparing Hazardous Materials for Military Air Shipments,* 3 December 2012

AFMAN 31-229, *USAF Weapons Handling Manual,* 12 May 2004

AFMAN 33-363, *Management of Records,* 1 March 2008

AFPD 10-8, *Defense Support of Civil Authorities (DSCA),* 15 February 2012

AFPD 11-2, *Aircrew Operations,* 19 January 2012

AFPD 11-4, *Aviation Service,* 1 September 2004

AFTTP 3-3.CV-22, *Combat Aircraft Fundamentals*, 6 April 2012

DoD 4515.13-R, *Air Transport Eligibility*, 1 November 1994

DoD 5200.1, *DoD Information Security Program,* 24 February 2012

DoD 7730.57, *Aviation Career Incentive Act and Required Annual Report*, 12 August 2008

Joint Pub 3-04.1, *Joint Tactics, Techniques and Procedures for Shipboard Helicopter Operations,* 10 December 1997

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* 15 June 2011

TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding,* 24 June 2010

TO 00-25-245, *Testing and Inspection Procedures Personnel Safety and Rescue Equipment,* 01 September 2006

TO 00-75-5, *Use, Inspection and Maintenance Stokes Rescue Litters,* 01 April 1979

TO 14S6-3-1, *Forest Penetration, Rescue Seat Assembly, PN K26-1000-5,-9 (Kaman),* 30 August 1995

USSOCOM Manual 350-3, *Airborne Operations (Parachuting),* 5 January 2007

USSOCOM Manual 350-4, Vol 1, *Combat Swimming/Diving Operations,* 30 October 2007

USSOCOM Manual 350-4, Vol 2, *Combat Rubber Raiding Craft Operations*, 15 August 2005

USSOCOM Manual 350-6, *Special Operations Forces Infiltration/Exfiltration Techniques,*

15 September 2011

Forms Adopted

AF Form 15, *USAF Invoice*

AF Form 315, *USAF Aviation Fuels Invoice*

AF Form 457, *USAF Hazard Report*

AF Form 651, *Hazard Air Traffic Report (HATR)*

AF Form 664, *Aircraft Fuels/Ground Servicing Documentation Log*

AF Form 711B, *USAF Mishap Report*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AFSOC Form 97, *Aerospace Vehicle Battle Damage Incident Debrief/Assessment/Repair Record*

AFTO Form 46, *Prepositioned Life Support Equipment*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance*

DD Form 175, *Military Flight Plan*

DD Form 365, *Record of Weight and Balance Personnel*

DD Form 365-4, *Weight and Balance Clearance Form F-Transport*

DD Form 1801, *DoD International Flight Plan*

DD Form 2131, *Passenger Manifest*

Operational Report (OPREP)-3, *Event or Incident Report*

Acronyms and Abbreviations

ACC—Air Combat Command

ACM—Additional Crew member

ADIZ—Air Defense Identification Zone

AETC—Air Education and Training Command

AFCS—Flight Control System

AFE—Aircrew Flight Equipment

AFFSA—Air Force Flight Standards Agency

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMSS—Air Force Mission Support System

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Component

AFSOC—Air Force Special Operations Command

AFSOF—Air Force Special Operations Forces

AFTTP—Air Force Tactics, Techniques, and Procedures

AGL—Above Ground Level

AHO—Above Highest Obstacle

AI—Altitude Indicator

AIE—Alternate Insertion Extraction

AIMS—Airlift Implementation and Monitoring System

AMC—Air Mission Commander

ANG—Air National Guard

AOC—Air Operations Center

AOR—Area of Responsibility

APLN—Airplane

APPR—Approach

APPS—Analytical Photogrammetric Positioning Systems

AR—Aerial Refueling

ARMS—Aviation Resource Management Systems

ATC—Air Traffic Control

ATD—Aircrew Training Device

ATO—Air Tasking Order

ATV—All Terrain Vehicles

AWL—Above Water Level/Above Wing Level

BFT—Blue Force Tracker

BFWS—Blade Fold Wing Stow

BIT—Built in Test

BRNAV—Basic Area Navigation

C2—Command and Control

CC—Commander

CCC—Command and Control Center

CCT—Combat Control Team

CG—Center of Gravity

CHOP—Change of Operating Control

CHUM—Chart Updating Manual

CLO—Combat Logistics Operations

CMS—Cockpit Management System

COMAFSOF—Commander Air Force Special Operations Forces

CONUS—Continental United States

CONV—Conversion

COP—Common Operating Picture

CRRC—Combat Rubber Raiding Craft

CSF—Computer Systems Flight

DEU—Display Electronics Unit

DH—Decision Height

DMC—Deputy Mission Commander

DME—Distance Measuring Equipment

DoD—Department of Defense

DoT—Department of Transportation

DSN—Defense Switched Network

DSO—Direct Support Operator

DSR—Deployed Status Report

DTED—Digital Terrain Elevation Data

DV—Distinguished Visitor

DZ—Drop Zone

ECL—Engine Condition Lever

ECM—Electronic Countermeasures

ECS—Environmental Control System

EIA—Enhanced Interrupted Alignment

EMI—Electromagnetic Interference

ENAV—Electronic Navigation

EO—Executive Order

ESA—Emergency Safe Altitude

ESTAT—Execution Status and Monitoring

ETA—Estimated Time of Arrival

ETB—Estimated Time in Blocks

ETE—Estimated Time En route

ETL—Effective Translational Lift

ETP—Equal Time Points

FAA—Federal Aviation Administration

FAF—Final Approach Fix

FARP—Forward Arming and Refueling Point

FCF—Functional Check Flight

FCG—Foreign Clearance Guide

FCIF—Flight Crew Information File

FD—Flight Director

FDP—Flight Duty Period

FE—Flight Engineer

FL—Flight Level

FLIP—Flight Information Publication

FLIR—Forward Looking Infrared

FMP—Flight Manuals Program

FSO—Flight Safety Officer

FSS—Flight Service Station

FTU—Flying Training Unit

GDSS2—Global Decision Support System 2

GPS—Global Positioning System

GRDP—Ground Refuel Defuel Panel

HAA—Height Above Aerodrome

HABD—Helicopter Aircrew Breathing Device

HAT—Height Above Touchdown

HATR—Hazardous Air Traffic Report

HEED—Helicopter Emergency Egress Device

HERPS—Hostile Environment Repair Procedures

HF—High Frequency

HQ—Headquarters

HUD—Heads Up Display

IAW—In Accordance With

ICAO—International Civil Aviation Organization

ICS—Intercommunications System

IFE—In-Flight Emergency

IFF—Identification Friend or Foe

IFR—Instrument Flight Rules

IMC—Instrument Meteorological Conditions

IAF—Initial Approach Fix

INAV—Inertial Navigation

INS—Inertial Navigation System

IP—Instructor Pilot, Initial Point

IR—Infrared/Instrument Route

JMPS—Joint Mission Planning System

JSOAC—Joint Special Operations Air Component

JTWS—A—Joint Threat Warning System-Air

KGS—Knots Ground Speed

KIAS—Knots Indicated Airspeed

LOS—Line of Sight

LRU—Line Replacement Unit

LVA—Low Visibility Approach

LVTO—Low Visibility Take Off

LZ—Landing Zone

MAF—Mobility Air Forces

MAJCOM—Major Command

MC—Mission Commander

MDA—Minimum Descent Altitude

MDS—Mission Design Series

ME—Mission Essential

MEA—Minimum En route Altitude

MFD—Multi-function Display

MIJI—Meaconing, Intrusion, Jamming, and Interference

MSA—Minimum safe altitude

MSL—Mean Sea Level

MUTES—Multiple Threat Emitter System

NAVAID—Navigational Aid

NC—Non-Current

NOTAM—Notice to Airman

NORTHCOM—Northern Command

nm—Nautical Mile

NVG—Night Vision Goggles

OCF—Operational Check Flight

OCONUS—Outside Continental United States

OEI—One Engine Inoperative

OGE—Out of Ground Effect

OPCON—Operational Control

OPR—Office of Primary Responsibility

OPREP—Operational Report

OPSEC—Operation Security

ORM—Operational Risk Management

PDA—Personal Digital Assistant

PED—Personal Electronic Device

PEDD—Portable Electronic Display Device

PEX—Patriot Excalibur

PFPS—Portable Flight Planning Software

PIC—Pilot in Command

PL—Precautionary Landing

POC—Point of Contact

PTP—Point to Point

RDS—Records Disposition Schedule

RMWS—Ramp Mounted Weapon System

RNAV—Area Navigation

ROBD—Reduced Oxygen Breathing Device

SA—Situational Awareness

SAR—Search and Rescue

SATCOM—Satellite Communication

SCP—Set Clearance Plane

SFI—Standby Flight Instruments

SG—Surgeon General

SI—Spectrum Interference

SID—Standard Instrument Departure

SIF—Selective Identification Feature

SIRFC—Suite of Integrated Radio Frequency Countermeasures

sm—Statute Mile

SOF—Special Operations Forces

SOFAPPS—Special Operations Forces Applications

SOFPARS—Special Operations Forces Planning and Rehearsal Systems

SOP—Standard Operating Procedures

SOW—Special Operations Wing

SPIE—Special Patrol Insertion and Extraction

SQ—Squadron

ST—Special Tactics

STAN/EVAL—Standardization/Evaluation

STAR—Standard Terminal Arrival Route

STO—Short Takeoff

STS—Special Tactics Squadron

TA—Terrain Avoidance

TBMCS—Theater Battle Management Core Systems

TCAS—Traffic Alert and Collision Avoidance System

TCL—Thrust Control Lever

TDY—Temporary Duty

TECHSUM—Technical Summary

TF—Terrain Following

TO—Technical Order

TOT—Time On/Over Target

TOLD—Take-Off and Landing Data

TSOC—Theater Special Operations Commands

UHF—Ultrahigh Frequency

UNQ—Unqualified

US—United States

USAF—United States Air Force

USDAO—United States Defense Attaché Office

USSOCOM—United States Special Operations Command

VCSL—Voice Call Sign Listing

VFG—Variable Frequency Generator

VFR—Visual Flight Rules

VHF—Very High Frequency

VMC—Visual Meteorological Conditions

VMPS—V-22 Mission Planning System

VTOL—Vertical Takeoff and Landing

WIC—Weapons Instructor Course

WX—Weather

Terms

ABORT—To turn back from or cut short a mission before its successful completion for reasons other than enemy action. This may occur after an aircraft is airborne or on the ground before takeoff.

ADDITIONAL CREW MEMBER (ACM)—An additional crew member is one assigned in addition to the normal aircrew complement required for a mission for purposes of performing flight evaluations, supervising, or monitoring in-flight procedures.

ALERT AIRCRAFT—An operationally ready aircraft specifically designated to be launched IAW timing factors established for the assigned missions with a ready crew available.

COMMANDER, AIR FORCE SPECIAL OPERATIONS FORCES (COMAFSOF)—The commander designated by USCINCSOC for CONUS deployments or by theater SOC/CCs for overseas deployments, who is responsible for management of Air Force Special Operations Forces (AFSOF) within a theater, a geographic area, or a designated operation. The COMAFSOF is responsible to USCINCSOC for management of CONUS-deployed AFSOF or to the respective SOC/CC for management of theater assigned AFSOF and is responsible to COMAFSOC for monitoring and management of AFSOF operating within the specific area of responsibility.

COMMAND AND CONTROL—The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

CONTINGENCY MISSION—A mission operated in direct support of an OPLAN, operation order, disaster, or emergency.

DESIGNATED REPRESENTATIVE—Individuals authorized in writing by the appropriate command level as having decision-making authority.

EXERCISE—A military maneuver or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training or evaluation. It may be

combined, joint, or single-service, depending on participating organizations. forward arming and refueling point (FARP)—A temporary facility organized, equipped, and deployed by an aviation commander, and normally located in the main battle area closer to the area where operations are being conducted than the aviation unit's combat service area to provide fuel and ammunition necessary for the employment of aviation maneuver units in combat. The forward arming and refueling point permits combat aircraft to rapidly refuel and rearm simultaneously.

HAZARDOUS CARGO OR MATERIALS—Explosive, toxic, caustic, nuclear, combustible or flammable, biologically infectious, or poisonous materials that may directly or indirectly endanger human life or property, particularly if misused, mishandled, or involved in accidents.

HOT REFUELING—Hot refueling is the transfer of fuel into an aircraft with one or more aircraft engines operating.

MANIFEST—Movement record of traffic airlifted on aircraft operated by, for, or under the control of the Air Force.

MISSION FOLLOWING—Monitoring the location and status of aircraft and crews through the use of departure, arrival, and advisory messages.

NIGHT WATER OPERATIONS—Low and slow, rope ladder, fast rope, CRRC deployment, and hoist operations below 50' AWL over water during hours of darkness.

OPERATIONALLY READY AIRCRAFT—An aircraft which is capable of flight with all required equipment operable to carry out the primary assigned mission.

Attachment 2

REQUIRED PUBLICATIONS LISTING

Table A2.1. Required Publications Listing.

PUBLICATION	PILOT	FE	DSO
AFI 11-202, Vol 1	I	I	I
AFI 11-202, Vol 2	I/E	I/E	I/E
AFI 11-202, Vol 3	X	X	X
AFMAN 11-217, Vol 1	X		
AFMAN 11-217, Vol 2	X		
AFI 11-2CV-22, Vol 1	X	X	X
AFI 11-2CV-22, Vol 2	X	X	X
AFI 11-2CV-22, Vol 3	X	X	X
AFI 11-2CV-22, Vol 3, CL-1	X*	X*	X*
AFI 11-401	I	I	I
FCIS (Note 1)	X	X	X
Interim Flight Clearance	X	X	
AFI 13-207	X	X	X
AFI 13-217	X	X	
ATP-56B	X	X	
A1-V22AC-AFM-000	X	X*	
A1-V22AC-AFM-500	X*	X*	
A1-V22AC-AFM-510		X*	
A1-V22AC-BWC-000		X	
A1-V22AC-CLG-000		X	
AFTTP 3-3.CV-22	X	X	
USSOCOM 350-3		X	
USSOCOM 350-4, Vol 1		X	
USSOCOM 350-4, Vol 2		X	
USSOCOM 350-6		X	
SOP	X	X	

I – Instructor, E – Evaluator, X – All.

***** required in flight.

Note: 1. AETC crews follow guidance contained in 58 OGI 11-202, AETC Supplements for FCIS requirements.

Attachment 3

OPORD BRIEFING FORMAT

A3.1. Purpose. This appendix provides procedures to standardize preparation and presentation of operation orders.

A3.2. Scope. These procedures apply to all CV-22 units assigned or attached to conduct joint/combined operations.

A3.3. General.

A3.3.1. Conduct operation order (OPORD) briefings to allow adequate preparation of individual maps and time for necessary crew coordination. (T-3)

A3.3.2. Conduct update briefs prior to departure to relay changes/additions to mission, weather, or to verify time hack, etc. (T-3)

A3.3.3. Each unit will conduct detailed flight briefings and verify crew understanding (brief-backs) of all aspects of the mission. (T-3)

A3.3.4. Designate planning cells; exempt members from unnecessary duties during the planning phase. (T-3) Clearly delineate duties to cell members. (T-3)

A3.3.5. When possible, the Commander's representative (Flight Lead [FL]) will prepare and conduct the mission briefing. (T-3) All phases of the operation will be briefed in detail. (T-3)

A3.3.6. Portions of the OPORD that do not apply to a given mission need not be briefed. Ground Force Commanders or their representatives should be present to field related questions, monitor changes, and validate plans.

A3.3.7. Augment briefings with appropriate diagrams and charts. (T-3) Construct diagrams as accurately as possible. Charts or diagrams not depicted to scale should be labeled as such. Additional guidance on the preparation of charts and diagrams can be found in Annex C.

Table A3.1. Charts/Kneeboard Handouts/Chart Kneeboard.

Item	Slide/Chart	Kneeboard
Task Organization	X	*
Time Schedule	*	X
Departure Airfield	X	X
FSB/Airfield/Transload	X	X
Objective/Actions on Objective	X	X
Signal (frequencies, callsigns, prowords)	*	X
Time, Distance, Heading (TDH) Card(s)	*	X
Holding Area/Hide Site, Transitional Site	X	X
FARP, A/R	X	X
IIMC Procedures	*	X
Bump Plan/Load Plan	*	X
Target Description (available photo/intelligence products)	X	X
Master Map with All Routes	X	N/A
Mission Profile/Phasing Diagram	X	*
MEDEVAC (facility/procedures)	*	X
Crew Assignments	*	X
X = Required, * = Optional		

A3.3.8. Briefing Media. The standard for presentation of a deliberate mission briefing is prioritized as follows: (This may not be possible during Crisis Action Planning due to time constraints.)

A3.3.8.1. Computer generated slide presentation augmented by required maps and charts. Always back up the computer slide show with sufficient charts. (T-3) The Air Mission Commander (AMC) and mission briefer should determine the minimum requirement for backup media.

A3.3.8.2. Opaque projector (Elmo) to project packet material.

A3.3.8.3. Overhead slides supplemented with maps and charts.

A3.3.8.4. Posters developed with poster maker from kneeboard handouts.

A3.3.8.5. For in extremis type briefings, use of kneeboard items is acceptable.

A3.4. OPORD/Mission Briefing Format.

A3.4.1. The Navy Time Clock number is DSN 762-1401.

A3.4.2. TIME HACK. The time hack will be given prior to beginning the OPORD. This gains the attention of the crews and stops all activity among them. The time hack will be the same one given by the supported units (usually the ground commander). The time hack should be given in the following format:

A3.4.2.1. **"IN 1 MINUTE IT WILL BE 1900 ZULU/LOCAL. " "TURN ALL PAGERS AND CELL PHONES OFF/SILENT."**

A3.4.2.2. **"IN 30 SECONDS IT WILL BE 1900 ZULU/LOCAL. "**

A3.4.2.3. **"IN 10 SECONDS IT WILL BE 1900 ZULU/LOCAL. "**

A3.4.2.4. **"5, 4, 3, 2, 1, HACK, 1900 ZULU/LOCAL. "**

A3.4.3. ROLL CALL.

A3.4.4. CLASSIFICATION.

A3.4.5. OPORD NUMBER/NAME.

A3.4.6. REFERENCES. Maps (update Military Grid Reference System [MGRS]/Datum), Orders from Higher HQs, Flight Information Publication (FLIP), etc.

A3.4.7. TIME ZONE USED THROUGHOUT THIS OPORD/MISSION.

A3.4.8. TASK ORGANIZATION.

A3.4.9. HANDOUT/PACKET INVENTORY(distribute spare material after brief).

A3.4.10. MISSION OVERVIEW/PROFILE (very brief).

A3.4.11. PLEASE HOLD QUESTIONS UNTIL THE END OF THE BRIEFING (or as per briefer's instructions).

A3.4.12. SITUATION.

A3.4.12.1. Enemy Forces.

A3.4.12.2. Weather (current and forecast).

A3.4.12.2.1. Area of Operations/Objective Area.

A3.4.12.2.2. Staging Base/Forward Staging Base (SB/FSB).

A3.4.12.2.3. En Route: Ingress/Egress.

A3.4.12.3. Light Data.

A3.4.12.3.1. SR, SS, EENT, MR, MS, BMNT.

A3.4.12.3.2. Percent of Moon Illumination and Whether it is Usable.

A3.4.12.3.3. Angle of Moon During Operation.

A3.4.12.4. Sea Data.

A3.4.12.4.1. Sea State & Prevailing Currents.

A3.4.12.4.2. Water Temperature.

A3.4.12.4.3. Tidal Data.

A3.4.12.5. NOTAMS.

A3.4.12.6. HIRTAs.

A3.4.12.7. Terrain. (Analyze area of operations and objective area.)

A3.4.12.7.1. Key Terrain.

A3.4.12.7.2. Decisive Terrain.

A3.4.12.7.3. Avenues of Approach (air, land, and sea).

A3.4.12.7.4. Cover and Concealment.

A3.4.12.7.5. Observation and Fires.

A3.4.12.7.6. Hazards.

A3.4.12.7.7. Effect on Aviation.

A3.4.12.7.8. Effect on Mission.

A3.4.12.7.9. Choke Points on Route.

A3.4.12.8. Enemy Troops.

A3.4.12.8.1. Permissive/Non-Permissive Environment.

A3.4.12.8.2. En Route, Landing Zone (LZ)/Objective Area, FARP Sites, etc.

A3.4.12.8.3. Identification of Forces.

A3.4.12.8.4. Locations.

A3.4.12.8.5. Strength.

A3.4.12.8.6. Morale.

A3.4.12.8.7. Capabilities: Air Defense (AD), EW, CAS, CBRN, ATK HELO, FA, Mobility, Night Vision, Reaction Force, Reinforcement Capability, etc.

A3.4.12.8.8. Vulnerabilities.

A3.4.12.8.9. Activities: Current and Future.

A3.4.12.8.10. Command and Control.

A3.4.12.8.11. Service Support.

A3.4.12.8.12. Probable Courses of Action Following Mission Execution.

A3.4.12.8.13. Reaction Time From Known Locations.

A3.4.12.9. Friendly Forces.

A3.4.12.10. Higher Headquarters.

A3.4.12.10.1. Command Relationship (effective Date Time Group [DTG]).

A3.4.12.10.2. Mission.

A3.4.12.10.3. Intent.

A3.4.12.11. Ground/Assault Force.

A3.4.12.11.1. Command Relationship (effective DTG).

A3.4.12.11.2. Mission.

A3.4.12.11.3. Intent.

A3.4.12.12. Adjacent Units.

A3.4.12.12.1. Location.

A3.4.12.12.2. Mission.

A3.4.12.13. Airspace Coordination/Deconfliction.

A3.4.12.14. Attachments and Detachments.

A3.4.12.14.1. Command Relationship (effective DTG).

A3.4.12.14.2. Mission.

A3.4.12.14.3. Location.

A3.4.12.15. Priority Intelligence Requirements (PIR)/Information Requirements (IR).

A3.4.12.16. Essential Elements of Information (EEI)/EEFI.

A3.4.13. MISSION. (Who, What, When, Where, Why.)

A3.4.14. EXECUTION. Commander's Intent.

A3.4.14.1. Concept of the Operation. This operation will be conducted in (#) phases.

A3.4.14.1.1. Event/Time Driven; H-Hour (if applicable).

A3.4.14.1.2. General Scheme, Mission Profile, Phasing.

A3.4.14.2. Scheme of Maneuver. Detailed phase briefing.

A3.4.14.3. Plan of Fire Support. (Present brief IAW Annex F for audiences requiring full Fire Support plan).

A3.4.14.3.1. General Scheme (Air, Ground, Naval).

A3.4.14.3.2. Priority of Fires.

A3.4.14.3.3. Target Overlay.

A3.4.14.3.4. Types of Fires.

A3.4.14.3.5. Preparatory/Pre-H-Hour Fires.

A3.4.14.3.6. Illumination Requirements.

A3.4.14.3.7. Joint Suppression of Enemy Air Defense (JSEAD).

A3.4.14.3.8. Employment of Nuclear/Chemical Fires.

A3.4.14.3.9. FSCM.

A3.4.14.3.9.1. RFL, CFL, RFA, CFA, NFA, etc.

A3.4.14.3.9.2. Location and Marking of Friendly Forces.

A3.4.14.3.10. Capability of Infrared (IR) Marking (sparkle/burn) of the Objective (OBJ).

A3.4.14.3.11. Coordinating Instructions. **Note:** This listing of coordinating instructions does not imply any requirement for chronological application. Logic/clarity is paramount. These instructions may be briefed during "Scheme of Maneuver" as they apply to each phase with unaddressed coordinating instructions common to all phases briefed at this juncture. Avoid repetition and do not address irrelevant items.

A3.4.14.3.12. Tasks to Subordinate Units.

A3.4.14.3.12.1. Companies, Platoons, Sections, or Teams.

A3.4.14.3.12.2. Aviation Unit Maintenance (AVUM).

A3.4.14.3.12.3. Headquarters.

A3.4.14.3.13. Tasks to Combat Support Units.

A3.4.14.3.13.1. Air Defense.

A3.4.14.3.13.2. Command Relationship.

A3.4.14.3.13.3. Specified Tasks.

A3.4.14.3.13.4. Chemical (decontamination).

A3.4.14.3.13.5. Electronic Warfare.

A3.4.14.3.13.6. Counter-Air Operations.

A3.4.14.3.13.7. Electronic Warfare (EW).

A3.4.14.3.13.8. Collection and Jamming.

A3.4.14.3.13.9. Type of Targets.

A3.4.14.3.13.10. Priority of Jamming.

A3.4.14.3.13.11. Engineering (Battlefield Preparation).

A3.4.14.3.14. Deception.

A3.4.14.3.14.1. LZs, Routes, etc.

A3.4.14.3.14.2. Special Movement and Landing Instructions.

A3.4.14.3.14.3. Deception Target and Intent.

A3.4.14.3.15. Maps and Charts.

A3.4.14.3.16. Sequence of Timed Events.

A3.4.14.3.17. Marshaling Plans.

A3.4.14.3.18. Fuel Requirements.

A3.4.14.3.19. Aircraft Parking Plans.

A3.4.14.3.20. Aircraft Load Plans (C5/17/130/141).

A3.4.14.3.21. Passenger Load Plans.

A3.4.14.3.22. ISB/FSB Procedures and Combat Control Team (CCT).

A3.4.14.3.23. Aircraft Configuration Plans (Assault/Attack).

A3.4.14.3.24. Hazardous Cargo Procedures.

A3.4.14.3.25. Security Requirements.

A3.4.14.3.26. Aircraft Arming/Dearming.

A3.4.14.3.27. Aircraft Survivability Equipment (ASE) Requirements.

A3.4.14.3.28. Spare Aircraft Requirements.

A3.4.14.3.29. Pickup Zone (PZ)/LZ Procedures.

A3.4.14.3.30. Formation Flight Procedures.

A3.4.14.3.31. Preplanned Fires.

A3.4.14.3.32. Fields of Fire.

A3.4.14.3.33. Laager Areas/Procedures.

A3.4.14.3.34. FARP Procedures. (May brief as annex.)

A3.4.14.3.34.1. Location, Marking, and Marshaling Control.

A3.4.14.3.34.2. Airspace Management.

A3.4.14.3.34.3. Refueling Points.

A3.4.14.3.34.4. Rearm Points.

A3.4.14.3.34.5. Safety (weapons, ammunition, personnel).

A3.4.14.3.34.6. Security.

A3.4.14.3.34.7. Dispersal Plan (include link-up procedures at Rally Point).

A3.4.14.3.34.8. Lighting.

A3.4.14.3.35. Aircrew Coordinating Instructions with Assault Force in Flight (time warnings and navigation).

A3.4.14.3.35.1. Fast Rope Procedures, Doors Open/Closed, Removal of Cargo Strap, Primary Doors.

A3.4.14.3.35.2. Headset/Comm Coordination.

A3.4.14.3.35.3. Call Out Air Control Points (ACPs)/Release Point (RP)-TDH to OBJ/LZ.

A3.4.14.3.35.4. Time Warnings.

A3.4.14.3.35.5. Confirm LZ.

A3.4.14.3.35.6. Door Fires.

A3.4.14.3.35.7. Clamshell Report.

A3.4.14.3.36. Uniform.

A3.4.14.3.37. Mission Oriented Protective Posture (MOPP) Level. (Include instructions on CBRN defense, decontamination procedures, and Operation Exposure Guide (OEG).)

A3.4.14.3.38. ROE.

A3.4.14.3.38.1. Combatants.

A3.4.14.3.38.2. Noncombatants.

A3.4.14.3.39. Return to Force Procedures.

A3.4.14.3.39.1. Passage Points/Procedures.

A3.4.14.3.39.2. Communications Requirements (hostile territory to friendly

territory).

A3.4.14.3.39.3. Transponder Requirements.

A3.4.14.3.40. Precious Cargo Handling Instructions.

A3.4.14.3.40.1. Handling and Control (in/out of aircraft).

A3.4.14.3.40.2. Control in the Aircraft.

A3.4.14.3.40.3. Doors Closed.

A3.4.14.3.40.4. Reporting Requirements ("Clamshell" report).

A3.4.14.3.41. Drop Dead Times.

A3.4.14.3.42. Flight Route.

A3.4.14.3.42.1. Formation.

A3.4.14.3.42.2. Airspeed/Ground Speed.

A3.4.14.3.42.3. Altitudes.

A3.4.14.3.42.4. Hazards to Flight.

A3.4.14.3.42.5. Turns in Excess of Sixty Degrees.

A3.4.14.3.42.6. Aircraft Lighting.

A3.4.14.3.42.7. Checkpoints.

A3.4.14.3.42.8. Rally Points (air/ground).

A3.4.14.3.42.9. Point of No Return.

A3.4.14.3.42.10. Brief Penetration Control Point (PCP) Measures (as applicable).

A3.4.14.3.42.11. Identification, Friend or Foe (IFF) Set for Penetration.

A3.4.14.3.42.12. ASE/Electronic Countermeasures (ECM) (APR-39/44, Flares, Chaff, ALQ-144, WX, Radar, TACAN, etc.).

A3.4.14.3.42.13. RP. TDH from RP to OBJ.

A3.4.14.3.42.14. IFF.

A3.4.14.3.42.15. ASE requirements (specify actions along route when cross Forward Line of Own Troops [FLOT]).

A3.4.14.3.42.16. Weapons Status in conjunction with ROE.

A3.4.14.3.42.17. Weapons Hold. Do not fire except in self-defense.

A3.4.14.3.42.18. Weapons Tight. Fire only at targets positively identified as hostile.

A3.4.14.3.42.19. Weapons Free. Gunners may engage any target not positively identified as friendly.

A3.4.14.3.43. Equipment Checks.

A3.4.14.3.43.1. Individual.

A3.4.14.3.43.2. Aircraft Systems.

A3.4.14.3.43.3. Weapons Systems/Test Fires.

A3.4.14.3.44. Link-Ups.

A3.4.14.3.44.1. Aerial.

A3.4.14.3.44.2. Ground.

A3.4.14.3.45. Assault Procedures/Actions on the OBJ.

A3.4.14.3.46. Tail Scanner Fire Procedures/Control.

A3.4.14.3.47. Communications Checks.

A3.4.14.3.48. Individual Responsibilities.

A3.4.14.3.48.1. Flight Plan.

A3.4.14.3.48.2. Manifest.

A3.4.14.3.48.3. Weather.

A3.4.14.3.48.4. Sensitive Item Inventory.

A3.4.14.3.48.5. Weapons Issue.

A3.4.14.3.48.6. Aircraft Life Support Equipment (ALSE) Issue.

A3.4.14.3.48.7. Mission Brief Sheet/Risk Assessment.

A3.4.14.3.48.8. Sterilization, ISOPREP.

A3.4.14.3.48.9. Fuel ID Plates (Identiplate/Government Credit Card).

A3.4.14.3.48.10. NVGs/Emergency Locator Transmitter (ELT)/MX Radio/Aircraft Key.

A3.4.14.3.49. Back-brief Time and Location. CDR, Platoon Leader, AMC, FL, and Key Personnel.

A3.4.14.3.50. Weather Decision Time, Criteria, and Location of Decision.

A3.4.14.3.51. Final Mission Update Time and Location.

A3.4.14.3.52. Ground Force Support/Flight Time Codes to be logged on 2408-12 (See Annex D).

A3.4.14.3.53. SAFETY (Infuse throughout OPORD). Consider:

A3.4.14.3.53.1. Procedures to Prevent Fratricide.

A3.4.14.3.53.2. Individual Safety.

A3.4.14.3.53.3. Aircraft Safety.

A3.4.14.3.53.4. Precious Cargo Safety.

A3.4.14.3.53.5. Weather.

A3.4.14.3.53.6. Weapons Handling.

A3.4.14.3.53.7. Critical Tactical Tasks.

A3.4.14.3.53.8. Risk Assessment/Control Measures.

A3.4.14.3.53.9. Passenger Seating/Security.

A3.4.14.3.53.10. Pre-accident Plan.

A3.4.14.3.54. PAG.

A3.4.14.3.55. Debrief Time and Location.

A3.4.14.3.56. Contingencies. **Note:** This listing of contingency actions does not imply any requirement for chronological application. Logic/clarity is paramount. These instructions may be briefed during "Scheme of Maneuver" as they apply to each phase with unaddressed contingency actions common to all phases briefed at this juncture. Avoid repetition and do not address irrelevant items.

A3.4.14.3.56.1. SAR/CSAR Plan. (May brief as separate annex.)

A3.4.14.3.56.1.1. Zones for Ingress/Egress/Safe Areas.

A3.4.14.3.56.1.2. Concept of Operation, Assets, C2, Signal.

A3.4.14.3.56.1.3. Weather/Divert Plan: Alternate Recovery Instructions.

A3.4.14.3.56.1.4. Effect on Tactical Operation.

A3.4.14.3.56.1.5. PLS Coordination.

A3.4.14.3.56.1.6. Activation/Implementation of SAR plan.

A3.4.14.3.56.1.7. Command and Control.

A3.4.14.3.56.1.8. Current Theatre SPINS.

A3.4.14.3.56.1.9. Downed Aircraft/Emergency Extractions

A3.4.14.3.56.1.10. E&R Plan. (May brief as separate annex.)

A3.4.14.3.56.1.10.1. Comm Procedures. (PLS/PRC-112/SABER, etc.)

A3.4.14.3.56.1.10.2. Escape and Evasion Route, Checkpoints, and Procedures.

A3.4.14.3.56.1.10.3. Recovery Sites (RSs), Selected Area For Evasion (SAFE).

A3.4.14.3.56.1.10.4. Recognition and Recovery Procedures.

A3.4.14.3.56.1.10.5. Notification Procedures.

A3.4.14.3.56.1.10.6. PLS and ISOPREP Coordination.

A3.4.14.3.56.1.10.7. Destruction of Aircraft and Sensitive Items.

A3.4.14.3.56.1.10.8. Current Theatre SPINS.

A3.4.14.3.56.2. Inadvertent Instrument Meteorological Conditions (IIMC) Procedures (Coordinate A2C2 as necessary).

A3.4.14.3.56.2.1. Altitude to Climb to, Heading, Airspeed, Squawk.

A3.4.14.3.56.2.2. Recovery Airfield and Instrument Capabilities.

A3.4.14.3.56.2.3. Minimum Safe Altitude.

A3.4.14.3.56.2.4. Communications Procedures.

A3.4.14.3.56.2.5. Highest Terrain, Obstacles, and Hazards.

A3.4.14.3.56.2.6. Effect on Mission.

A3.4.14.3.56.2.7. Forecast Weather and Freezing Level.

A3.4.14.3.56.2.8. Tactical Procedures.

A3.4.14.3.56.2.9. Precision Letdown Procedures (GPS) at FSB, ISB, TGT.

A3.4.14.3.56.2.10. IMC TF Procedures.

A3.4.14.3.56.3. Abort Criteria/Procedures.

A3.4.14.3.56.3.1. Weather.

A3.4.14.3.56.3.2. Aircraft (Minimum #/Systems Failure Criteria).

A3.4.14.3.56.3.3. Joint Operations Specific.

A3.4.14.3.56.4. Go-arounds.

A3.4.14.3.56.5. Bump Plans, to Include Critical Pax and/or Equipment.

A3.4.14.3.56.6. Change of Lead.

A3.4.14.3.56.7. Dispersal Plans, to Include Rejoin Procedures.

A3.4.14.3.56.8. Communication Failures/Mode 4 Failures.

A3.4.14.3.56.9. Actions on Contact.

A3.4.14.3.56.10. Alternate Routes.

A3.4.14.3.56.11. Antiterrorism Measures.

A3.4.15. SERVICE SUPPORT. (May be briefed as detailed annex.)

A3.4.15.1. Supply.

A3.4.15.1.1. Class I (Rations/Water).

A3.4.15.1.2. Class II.

A3.4.15.1.2.1. ALSE.

A3.4.15.1.2.2. CBRN Equipment.

A3.4.15.1.2.3. Weapons.

A3.4.15.1.3. Class III (Petroleum, Oils, and Lubricants (POL)).

A3.4.15.1.3.1. Locations.

A3.4.15.1.3.2. Type(s).

A3.4.15.1.3.3. Amount.

A3.4.15.1.3.4. Compatibility of Fuel and Equipment.

A3.4.15.1.4. Class V (Ammunition).

A3.4.15.1.4.1. Issue Point and Procedures.

A3.4.15.1.4.2. Individual Authorizations by Type.

A3.4.15.1.4.3. Crew-served Authorizations by Type.

A3.4.15.1.4.4. Aircraft Systems Authorizations by Type.

A3.4.15.1.4.5. Turn-in Procedures.

A3.4.15.1.4.6. Resupply Plan.

A3.4.15.1.5. Class VIII (Medical Supplies).

A3.4.15.1.6. Class IX (Repair Part).

A3.4.15.2. MEDEVAC Procedures.

A3.4.15.2.1. Responsibilities.

A3.4.15.2.2. Recovery Hospital/Joint Medical Augmentation Unit (JMAU) and Location.

A3.4.15.2.3. Coordination Procedures/Communications.

A3.4.15.2.4. Alternate Recovery Procedure.

A3.4.15.2.5. Objective Area Casualty Collection Point (CCP).

A3.4.15.2.6. Launch Authority.

A3.4.15.3. Maintenance.

A3.4.15.3.1. Location and Composition of Support.

A3.4.15.3.2. Pre-mission.

A3.4.15.3.3. Preflight.

A3.4.15.3.4. Crank.

A3.4.15.3.5. Mission.

A3.4.15.4. Location and Composition of Ground Support Equipment.

A3.4.15.4.1. Pre-mission.

A3.4.15.4.2. Preflight.

A3.4.15.4.3. Crank.

A3.4.15.4.4. Mission.

A3.4.15.4.5. Support Facilities Available.

A3.4.15.4.6. Hangar.

A3.4.15.4.7. Shops Capabilities.

A3.4.15.4.8. Downed Aircraft Recovery Team (DART).

A3.4.15.4.9. Recovery Officer-in-Charge (OIC) and Team Location.

A3.4.15.4.10. Notification will be made on Command Net Freq. with the Following Information:

A3.4.15.4.10.1. Type and Serial Number of Downed Aircraft.

A3.4.15.4.10.2. Location of Aircraft.

A3.4.15.4.10.3. Description of Recovery Site.

A3.4.15.4.10.4. Brief Description of Aircraft Condition.

A3.4.15.4.10.5. Area Security Call Sign/Freq.

A3.4.15.4.10.6. Sensitive Items and Aircraft Configuration.

A3.4.15.4.10.7. Destruction Criteria, if Required.

A3.4.15.4.11. Method of Recovery.

A3.4.15.4.11.1. Method of recovery or disposition of aircraft will be made after consideration of information received and tactical situation.

A3.4.15.4.11.2. Recovery will be made per Annex G.

A3.4.15.5. Special Equipment.

A3.4.15.5.1. ASE. **Note:** To mitigate the risk of inadvertent launch when using the Missile Warning System (MWS): The FL will address the mode of operation of the MWS with the AMC and (if applicable) the ground force. (T-3) The Air Mission Briefing is the mechanism to ensure that aircrews are aware of the mode of operation of the MWS. The Pilot-in-Command (PC) is ultimately responsible for the safe operation of the aircraft and will ensure that requirements for the operational use of the MWS are complied with during all missions. (T-3)

A3.4.15.5.2. PLS.

A3.4.15.5.3. ELT mode Selection (OVRT/CVRT).

A3.4.15.5.3.1. Peacetime. All aircraft will operate ELTs in the OVRT mode.

A3.4.15.5.3.2. Combat/Tactical. The commander will determine the ELT mode of operation (overt/covert) based on the enemy and friendly situation. (T-3) This information will be disseminated during the air mission briefing. (T-3)

A3.4.15.5.3.3. Aircrews. The PC will ensure that the appropriate mode of operation and frequency is selected for the ELT. (T-3)

A3.4.15.5.4. Oxygen.

A3.4.15.5.5. Fast Rope Insertion/Extraction System (FRIES).

A3.4.15.5.6. Cargo Hook.

A3.4.15.5.7. Seats.

A3.4.15.5.8. Location of Decontamination Sites, CBRN Support.

A3.4.15.6. Services (hygiene, laundry, trash collection, etc.).

A3.4.15.7. Storage Facilities/Requirements.

A3.4.15.8. Transportation.

A3.4.15.9. Billeting.

A3.4.15.10. Personnel.

A3.4.15.11. Finance.

A3.4.15.12. Casualty Reporting Procedures.

A3.4.15.13. Discipline, Law, and Order.

A3.4.15.14. Field Mail.

A3.4.15.15. Morale Support.

A3.4.15.16. POW Handling/Collection Point (include civilian detainees, if applicable).

A3.4.16. COMMAND AND SIGNAL.

A3.4.16.1. Command.

A3.4.16.1.1. Commander Location.

A3.4.16.1.2. AMC/Air Component Commander (ACC) Designation and Location.

A3.4.16.1.3. Assault Force Commander and Location. (Second in Command).

A3.4.16.1.4. Task Force (TF) Commander and Location.

A3.4.16.1.5. Succession of Command.

A3.4.16.1.6. Rear Detachment Commander/Executive Officer (XO).

A3.4.16.1.7. Battalion/Company CP Location.

A3.4.16.1.8. TF CP Location.

A3.4.16.1.9. Assault Force CP Location.

A3.4.16.1.10. Command Sergeant Major (CSM)/1SG Location.

A3.4.16.2. Signal.

A3.4.16.2.1. SOI/CEOI Period (fill dates/positions).

A3.4.16.2.2. Call Signs.

A3.4.16.2.3. Frequencies/Net(s) (primary/alternate, secure/non-secure).

A3.4.16.2.3.1. Mission Command.

A3.4.16.2.3.2. TF Command.

A3.4.16.2.3.3. Helo Common.

A3.4.16.2.3.4. Company Internal.

A3.4.16.2.3.5. Adjacent Units.

A3.4.16.2.3.6. Fire Control.

A3.4.16.2.3.7. SAR.

A3.4.16.2.3.8. SERE/PLS (PRC 112-A-B.)

A3.4.16.2.3.9. MEDEVAC.

A3.4.16.2.3.10. ATC/CCT.

A3.4.16.2.3.11. Airborne Warning and Control System (AWACS).

A3.4.16.2.3.12. Vectoring.

A3.4.16.2.3.13. SATCOM/HF.

A3.4.16.2.4. Execution Checklist/Prowords.

A3.4.16.2.5. Signals.

A3.4.16.2.5.1. Lights.

A3.4.16.2.5.2. Visual Markers.

A3.4.16.2.5.3. Recognition: day/night.

A3.4.16.2.5.4. Recognition: near/far.

A3.4.16.2.5.5. Challenge and Password.

A3.4.16.2.5.6. Running Password and Number Combination.

A3.4.16.2.5.7. Secure Communications Requirements. Identify element responsible for keying.

A3.4.16.2.5.8. Transponder.

A3.4.16.2.5.8.1. Mode Requirements (include KIT-1C) and Codes.

A3.4.16.2.5.8.2. Antenna Requirements.

A3.4.16.2.6. Aids to Navigation.

A3.5. Tab A Aircrew Coordination/In-Extremis Mission Brief.

Figure A3.1. Aircrew Coordination/In-Extremis Mission Briefing.

Aircrew Coordination/In-Extremis Mission Briefing.

1. Purpose. This is authorized in lieu of impractical situations for preparation/conduct of the full OPORD. Typical situations include: training/deployments for single ship or unilateral operations. crew coordination control when selected individuals have valid preclusion from full OPORD attendance, or as implied by—In-extremis situations. It is imperative for all crew members to have complete understanding of the mission.

2. Scope. Same as OPORD Scope.

3. Responsibility. AMCs/FLs are charged with prudent application of this alternative. Hold all questions until the end of the brief! Wall charts are not required.

4. TIME HACK.

ROLL CALL.

CLASSIFICATION.

REFERENCES (Coordinate Format, DATUM). TASK ORGANIZATION.

KNEEBOARD HANDOUTS. (Minimum: TDH, Time Flow, OBJ Diagram, Crew Card, Frequency Card, IIMC.

5. Mission Overview (very brief).

I. SITUATION.

Enemy Forces.

Weather/Illumination Data (FSB/OBJ).

Light Data.

Sea Data.

NOTAMS/SPINS/HIRTA.

Terrain.

Enemy Unit ID.

Location.

Disposition.

Enemy Capabilities/Limitations.

Probable Courses of Action.

Friendly Forces.

Mission of Next Higher Headquarters.

Mission (and Flight Routes) of Adjacent Units.

Mission of Supporting Units.

PIR/IR.

PAG.

Attachments and Detachments.

II. MISSION. (Who, What, Where, When, Why.)

III. EXECUTION.

Commander's Intent.

Time/Event Driven.

Concept of the Operation.

Scheme of Maneuver (phases in detail).

Fire Support/FSCM.

Test Fire.

EW.

AD.

Sub Unit Missions.

Ground Force Actions.

Team Actions.

Coordinating Instructions.

Marshaling Area Procedures: Show, Load, Comm, Crank, Lighting, CCT, Comm/Freq., Taxi, Lineup, Takeoff, Time, Heading, Airspeed, Altitude, Hazards, ASE, Fuel Required, Weapon Procedures.

Ingress Route: Formation, Groundspeed, Altitude, Hazards, Lighting, Weapon Status.

LZ: Location, Description, Hazards, TOT, Assault Formation, Lighting, Touchdown

Points, Fields of Fire, Exfil Procedures.

Egress Route: Formation, Groundspeed, Altitude, Hazards, Lighting, Weapon Status.

FARP/Refuel Procedures.

MOPP Level.

Debrief Time and Locations.

Contingencies.

Weather Abort.

Aircraft Abort.

Minimum Aircraft.

Mission Abort.

Downed Aircraft: FSB Bump Plan, Ingress, Objective,

Egress.

Actions on Enemy Contact.

Comm Failure.

SAR Plan: Recovery Hospital, PLS Coordination.

Evasion Plan: E&R Routes, CPs and Procedures, DAR, Recognition & Recovery Procedures.

SPINS.

Lead Change.

Lame Duck.

Bump Plan.

Go-around.

Alternate LZ/PZ.

Alternate Routes.

NVG Failure.

Fuel Contingency.

Rally Procedures.

TFIMC/TACIMC.

IIMC.

Medical Plan.

IV. SERVICE SUPPORT.

Fuel, Maintenance, Rearm, Chow, Remain Over Day (ROD)/Remain Overnight (RON).

V. COMMAND AND SIGNAL.

Command.

Chain of Command.

Location of Key Leaders.

Succession of Command.

FL.

Signal.

Frequencies/Fills.

Call Signs.

Other Signals.

Challenge and Reply.

Running Password.

Number Combination.

Emission Control (EMCON).

Transponder (XPDR).

VI. SAFETY.

Individual.

Aircraft.

Precious.

Cargo.

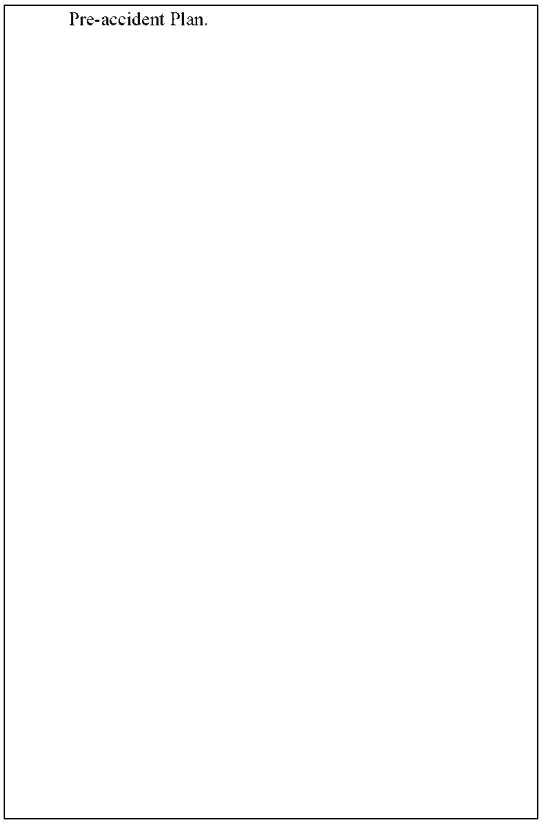
Weather.

Weapons Handling.

Fratricide Prevention.

Critical Tactical Tasks.

Risk Assessment and Control Measures.



A3.6. Tab B Aircrew Coordination/In-Extremis Mission Brief

Figure A3.2. Mission Debrief Format.

Mission Debrief Format.

1. Purpose. To establish a standard aircrew mission debrief format.

2. Scope. This aircrew mission debrief format may be utilized by all units assigned, attached, or OPCON to this headquarters.

3. General. Participating units conduct debriefs as soon as practical upon completion of the mission. Representatives of every unit participating in the mission will attend all debriefs. (T-3). All phases of mission planning and execution will be addressed, with the intent of improving all aspects of the operation. (T-3).

4. Format.

Roll Call. (Participants include FL, PCs, 1 x Crew Chief (CE) each aircraft, Ground Force Commander or representative, AMC, staff elements, other key players based on plan.)

Classification.

Mission Execution.

Restated Mission Statement.

Restated Commander's Intent.

Was the Mission Accomplished? To standard? (Limit discussion to single-phrase comments and discuss the details in proper sequence.) Discuss the following in the course of the debrief:

If not, which phase resulted in failure?

Discuss the events that contributed to failure.

If accomplished to standard, what was key to

FARP Operations.

Deviations from the Plan.

Communications throughout the Operation.

Maintenance Status of Aircraft.

During Mission.

Current. Intelligence.

Enemy Actions Upon Contact. (Describe, in detail, all enemy sightings.)

Enemy Battle Damage Assessment (BDA) (personnel and equipment), KIA, WIA, PW.

ECM Encountered (Jamming, Imitative Communications Deception [ICD], Manipulative Communications Deception [MCD], Meaconing). MIJI reports submitted.

Detailed SAM/ADA sightings or information obtained.

Were CBRN activities observed (provide location and details)?

Was mission observed by enemy?

Locations of Potential Future LZs.

Locations of Hazards that Could Affect Future Operations.

Was EEFI protected?

Friendly KIA, WIA, PW.

Weather Conditions and Deviations from Brief.

Terrain (map changes, obstacles/hazards, roads, etc.).

Flight Lead Comments and Lessons Learned.

Safety Officer Comments and Lessons Learned.

Aircrew Comments and Lessons Learned.

Pilots.

FEs/Gunners/Medics.

Observers.

Maintenance/Armament Personnel.

AMC/MSN CC Comments and Lessons Learned.